Bull ESCALA PL 1600R

Service Guide

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Service Guide

Hardware

June 2003

Trademarks and Acknowledgements

Contents

Safety Notices

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. *Danger* notices appear on the following pages:

- xii
- 139
- 746
- 767
- 892

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury. *Caution* notices appear on the following pages:

- xi
- xiii
- 94
- 139
- 746
- 765
- 813
- 900

For a translation of the safety notices contained in this book, see the *System Unit Safety Information*, order number SA23-2652.

Electrical Safety

Observe the following safety instructions any time you are connecting or disconnecting devices attached to the system.

DANGER

> **An electrical outlet that is not correctly wired could place hazardous voltage on 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.**
>
> **Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.**
>
> **During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communications lines.**
> **D06**

CAUTION:
This product is equipped with a four-wire (three-phase and ground) power cable for the user's safety. Use this power cable with a properly grounded electrical outlet to avoid electrical shock.
C27

DANGER

> **To prevent electrical shock hazard, disconnect all power cables from the electrical outlet before relocating the system.**
> D01

CAUTION:
This unit has more than one power supply cord. Follow procedures for removal of power from the system when directed.
C28

CAUTION:
Energy hazard, remove power before servicing.
C22

CAUTION:
Energy hazard, remove all jewelry before servicing.
C29

Laser Safety Information

CAUTION:
This product may contain a CD-ROM, DVD-ROM, or laser module on a PCI card, which are class 1 laser products.
`C30`

Laser Compliance

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with the IEC 825 (first edition 1984) as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

CAUTION:
All laser modules are designed so that there is never any human access to laser radiation above a class 1 level during normal operation, user maintenance, or prescribed service conditions. Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Only trained service personnel should perform the inspection or repair of optical fiber cable assemblies and receptacles.
`C25, C26`

Data Integrity and Verification

These computer systems contain mechanisms designed to reduce the possibility of undetected data corruption or loss. This risk, however, cannot be eliminated. Users who experience unplanned outages, system failures, power fluctuations or outages, or component failures must verify the accuracy of operations performed and data saved or transmitted by the system at or near the time of the outage or failure. In addition, users must establish procedures to ensure that there is independent data verification before relying on such data in sensitive or critical operations. Users should periodically check our support websites for updated information and fixes applicable to the system and related software.

About This Book

This book provides maintenance information that is specific to the 406/70, adapters, and attached devices that do not have their own service information. It also contains Maintenance Analysis Procedures (MAPs) that are not common to other systems.

MAPs that are common to all systems are contained in the *Diagnostic Information for Multiple Bus Systems*.

This book is used by the service representative to repair system failures. This book assumes that the service representative has had training on the system.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Highlighting

The following highlighting conventions are used in this book:

Bold	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Also identifies graphical objects such as buttons, labels, and icons that the user selects.
Italics	Identifies parameters whose actual names or values are to be supplied by the user.
`Monospace`	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or information you should actually type.

Related Publications

The following publications are available:

- The *System Unit Safety Information*, order number 86 X1 11WD, contains translations of safety information used throughout this book.
- The *Hardware Management Console Operations Guide*, order number 86 A1 83EF, contains information on how to set up and cable the hardware management console and verify system operation.
- The *Hardware Management Console Maintenance Guide*, order number 86 A1 84EF, contains MAPS, removal and replacement procedures, error codes, and parts information that help trained service representatives diagnose and repair the hardware management console.
- The *Installation Guide*, order number 86 A1 92EF, contains information on how to set up and cable the system, install and remove options, and verify system operation.
- The *User's Guide*, order number 86 A1 93EF, contains information on how to use the system, use diagnostics, use service aids, and operations.
- The *Diagnostic Information for Multiple Bus Systems*, order number 86 A1 26HX, contains common diagnostic procedures, error codes, service request numbers, and failing function codes. This manual is intended for trained service technicians.
- The *Adapters Information for Multiple Bus Systems*, order number 86 A1 27HX, contains information about adapters, external devices, and cabling. This manual is intended to supplement information found in the *Diagnostic Information for Multiple Bus Systems*.

- The *Site Preparation for Rack Systems*, order number 86 A1 30PX, contains information to help you plan your installation.
- The *AIX Installation Guide and Reference*, order number 86 A2 07EG, describes how to install systems, and to use a network server to do functions such as installing the operating system or diagnostics on systems connected to the network.

ATTENTION:

In this document, the term 406/70 stands for ESCALA PL 1600R.

Chapter 1. Reference Information

This chapter provides an overview of the 406/70, including a logical description and a physical overview of the system. Additional details pertaining to the server are also provided. They include the following:

- Memory overview and ordering rules
- General description of the operator panel
- Cabling rules
- System location rules and descriptions
- Powering on and powering off the system
- Power flow
- Data flow

406/70 Overview

The 406/70 server is a multiprocessor, multibus system composed of the following subsystems:

- 406/1R, a 24-inch wide and 42-EIA-high rack unit that also contains the following:
  - An 8-EIA unit power subsystem, consisting of two redundant bulk power assemblies that distribute bulk power at 350 V to each of the subsystems.
  - An optional 2 EIA-unit integrated battery feature (IBF), which is available in either a redundant or non-redundant configuration.
- 406/71 Processor Subsystem, a 17 EIA-unit processor subsystem, which contains the processors, L3 cache, memory, and service processor and a 1 EIA-unit media subsystem containing a diskette drive, a CD-ROM, and an operator panel, with space for up to three additional optional media devices.

  There is an option to expand the number of RIO (in this case RIO-2) ports to . This allows up to RIO-2 I/O subsystems, each with 2 GB-per-second transfers on each planar. Processor speeds up to 1.5 GHz are also available. Additional memory cards that operate at the higher 567 MHz bus speed are available.
- 406/1D I/O Subsystem, 4 EIA-units, which can have up to 20 PCI adapters and up to 16 DASD disk drives.

  This subsystem may also be purchased to allow 10 or 20 PCI-X adapters, for use with the RIO-2 cabling option. Additionally, there is an option that allows 1 GB RIO-2 on each remote I/O port. RIO-2 allows up to 2 GB I/O transfers when cabled as a single planar loop (four CEC RIO-2 ports per I/O subsystem).
- A Hardware Management Console (HMC), which provides a standard user interface for configuring and operating partitioned systems. One HMC can support multiple partitions on multiple systems.

The basic system consists of the redundant bulk power subsystem, one processor subsystem, a media subsystem, and one I/O subsystem in the same rack, and one HMC, as shown in the following illustration:

1	Hardware Management Console	5	406/1R primary Integrated Battery Feature (IBF), optional for the primary power subsystem.
			Redundant IBF, also optional, and installs from the rear.
2	406/1R Bulk Power Subsystem	6	406/1D I/O Subsystem
3	406/71 Processor Subsystem	7, 8	406/1D I/O Subsystem (Optional)
4	406/71 Media Subsystem		

You can expand the system by adding I/O subsystems for a total of three in one rack. The preceding figure shows the single rack.

A number of cables connect the power, processor, and I/O subsystems. These cables include the following:
- UPIC (Universal Power Interface Controller) cables
- RIO (Remote Input Output) cables

The ac power cords are connected to the bulk power subsystem, which distributes the power throughout the system.

Each I/O subsystem contains two I/O backplanes. Each backplane is capable of supporting the following:
- Up to 10 adapters each (20 per subsystem)
- Up to 8 disk drives (16 per subsystem) in two DASD 4-packs (4 per subsystem)
- One distributed converter assembly (DCA) (2 per subsystem)
- Two I/O subsystem fans (4 per subsystem)

On each I/O backplane, PCI bus slots 1 through 7 are 3.3 V dc connectors running at 66 MHz, supporting 64-bit PCI adapters. Slots 8 through 10 are 64-bit 5 V dc slots, running at 33 MHz.

The media subsystem provides space for up to three media devices (diskette drive, CD-ROM drive, and optional tape drive or DVD-RAM) in the front and two additional optional devices in the rear.

An entry I/O drawer is available that is a 4 EIA-unit- high drawer containing 1 I/O board (10 PCI slots maximum), 1 I/O planar assembly, up to 8 disk drives, 2 DASD backplanes, a midplane card, 4 cooling fans, and 2 power supplies (which are independent of the bulk power assembly). There can only be one of these drawers per system and it must be in position 1.

Hardware Management Console (HMC)

The Hardware Management Console (HMC) supports your system with features that allow you to manage configuration and operation of partitions in a system, as well as add and remove hardware without interrupting system operation.

In this book, a system that is managed by the HMC is referred to as the *managed system*. The HMC uses its serial connection to the managed system to perform various functions. The HMC's main functions include the following:

- Creating and maintaining a multiple partition environment
- Detecting, reporting, and storing changes in hardware conditions
- Acting as a service focal point for service representatives to determine an appropriate service strategy

Partitioning the system is similar to partitioning a hard drive. When you partition a hard drive, you divide a single hard drive so that the operating system recognizes it as a number of separate hard drives. The same holds true for the HMC's partitioning capabilities, except the HMC allows you to divide the system's processors, memory, and I/O. On each of these divisions, you can install an operating system and use each partition as you would a separate physical machine. This division of system resources is called a *logical partition*.

The objective of partitioning is to provide users with the capability to split a single system into several independent systems, each capable of running applications in multiple, independent environments simultaneously. For example, partitioning makes it possible for a user to run a single application using different sets of data on separate partitions, as if it were running independently on separate physical systems.

Service representatives use Service Focal Point (SFP), an application that runs on the HMC, to start and end their service calls. SFP provides service representatives with the serviceable event, vital product data (VPD), and diagnostic information.

The HMC is a closed system. Additional applications cannot be installed on the HMC. All the tasks needed to maintain the platform, the underlying operating system, and the HMC application code are available by using the HMC's management applications.

Partition Standby and Full System Partition Power-On Options

Booting your system in partition standby is markedly different from booting your system in a traditional single-machine full system partition. In partition standby, the system sets aside system memory for partition management.

Partition Standby Memory Issues

Unique issues are associated with assigning memory to each partition created in partition standby. In partition standby, the HMC allocates a portion of each assigned memory block to the system.

Each partition requires a minimum of 1 gigabyte (GB) of system memory. When you start creating partitions, the system sets aside 256 megabytes (MB) of contiguous memory for its own use, and allocates another 256 MB of contiguous memory for each 16 GB allocated.

Page Table Memory Usage: Partition page tables are additional memory required for a partition to operate, and is in addition to the total logical memory size of a partition. The partition table is outside of a partition's accessible memory. The partition page table must be constructed with contiguous real system

memory segments. Use the following table to help you keep track of the system's page-table memory usage:

Partition Memory Size (256 MB increments)	Partition Page Table Size (4 16-byte entries per 4 K real page)	Partition Page Table Alignment	Assigned Memory Segments (256 MB)
1 GB	16 MB	16 MB	1
1 GB - 2 GB	32 MB	32 MB	1
2 GB - 3 GB	64 MB	64 MB	1
4 GB - 7 GB	128 MB	128 MB	1
8 GB - 15 GB	256 MB	256 MB	1
16 GB - 31 GB	512 MB	512 MB	2
32 GB - 63 GB	1 GB	1 GB	4
64 GB - 96 GB	2 GB	2 GB	8

In a full system partition, the operating system uses all of the installed memory; the system does not set aside contiguous memory for its own use. Keep this in mind when you record the amount of memory used when you are completing the planning worksheets in the *Hardware Management Console Operations Guide*, order number SA23-1251.

Partition Requirements

To activate a partition, you need a *minimum* of the following:

* 1 GB of available system memory
* One available system processor
* One available network adapter (for error reporting)

If you attempt to activate a partition and the resources that you specified are not available at that time, activation fails. It is important to keep track of your system's resources and your activation times to avoid failures.

Service Focal Point

This chapter provides information about using the Service Focal Point application.

The Service Focal Point application is used to help the service representative diagnose and repair problems on partitioned systems. Service representatives use the HMC as the starting point for all service issues. The HMC groups various system management issues at one control point, allowing service representatives to use the Service Focal Point application to determine an appropriate service strategy.

Traditional service strategies become more complicated in a partitioned environment. Each partition runs on its own, unaware that other partitions exist on the same system. If one partition reports an error for a shared resource, such as a managed system power supply, other active partitions report the same error. The Service Focal Point application enables service representatives to avoid long lists of repetitive call-home information by recognizing that these errors repeat, and by filtering them into one error code.

The following types of errors are reported to Service Focal Point:

* Permanent hardware errors (detected by the managed system or operating system)
* LAN surveillance errors detected by Service Focal Point
* Hardware boot failure errors

The following errors are not reported to Service Focal Point:

* Software errors

- Temporary hardware errors
- Undetermined hardware errors
- Informational hardware errors

Errors that require service are reported to the HMC as *serviceable events*. Because the HMC stores these serviceable events for 90 days and then discards them, it is important to have the partition and HMC date and time set correctly. For instance, if the date on a partition's software is set 90 days *behind* the HMC's set time, the serviceable events reported by this partition are immediately discarded. For more information about setting the HMC's date and time, see the *Hardware Management Console Installation and Operations Guide*, order number SA23-1251. To set the partition's date and time, see the documentation provided with the operating system that is running on that partition.

Getting Started

When you are setting up Service Focal Point, keep the following in mind:

- If the time configured on a partition is 90 days older than time configured on the HMC, serviceable events cannot be reported.
- Verify that the HMC host names are defined. For more information about using fully qualified and short host names, see *Hardware Management Console Installation and Operations Guide*, order number SA23-1251.
- If you need to add or change a partition name, see the *Hardware Management Console Installation and Operations Guide*, order number SA23-1251.

Testing Error Reporting

To ensure that Service Focal Point is configured correctly, generate a test error by doing the following:

1. In the partition, run diagnostics to test the managed system's operator panel.
2. When the diagnostics window asks you if you see 0000 on the managed system's operator panel, select **NO**. This action generates an error.
3. In the SRN window, press Enter to proceed.
4. When the system asks you if you want the error sent to Service Focal Point, select **YES**.
5. Type F3 to exit diagnostics.
6. Wait for one minute while the managed system sends the error to Service Focal Point.
7. Check the Serviceable Event window to ensure that the error was sent to Service Focal Point and that Service Focal Point reported the error. For more information about working with serviceable events, see "Working With Serviceable Events" on page 7.

Service Focal Point Settings

The Service Focal Point Settings task in the HMC Contents area allows you to configure your Service Focal Point application.

Note: The Advanced Operator, Operator, and Viewer roles have read-only access to the following tasks.

Automatic Call-Home Feature: You can configure the HMC to automatically call an appropriate service center when it identifies a serviceable event.

To enable or disable the call-home feature, you must be a member of one of the following roles:
- System Administrator
- Service Representative

To enable or disable the call-home feature for one or more systems, do the following:

Note: It is strongly recommended that you not disable the call-home feature. When you disable the call-home feature, serviceable events are not automatically reported to the service representative.

1. In the Navigation area, click the **Service Applications** icon.

2. In the Navigation area, double-click the **Service Focal Point** icon.
3. In the Contents area, click **Service Focal Point Settings**.
4. The Service Focal Point Settings window opens. Select the **CEC Call Home** tab at the top of the window.
5. Click on the managed system you want to enable or disable.
6. Click **Enable** to enable call-home for the selected system, or click **Disable** to disable call-home for the selected system.
7. Click **OK**.

Setting Up Surveillance: Service Focal Point surveillance generates serviceable events when it detects communication problems between the HMC and its managed systems.

You can configure how you want the HMC to survey the following:
- The number of disconnected minutes that are considered an outage
- The number of connected minutes you want the HMC to consider a recovery
- The number of minutes between outages that are considered a new incident

To set up surveillance, you must be a member of one of the following roles:
- System Administrator
- Service Representative

To set up surveillance, do the following:
1. In the Navigation area, click the **Service Applications** icon.
2. In the Navigation area, double-click the **Service Focal Point** icon.
3. In the Contents area, select **Service Focal Point Settings**.
4. The Service Focal Point Settings window opens. Select the **Surveillance Setup** tab on the top of the window.
5. In the first field, select the number of minutes you want the HMC to wait before sending a disconnection error message.
6. In the second field, select the amount of connection time that the HMC is considered to be recovered. This amount is expressed in minutes.
7. In the third field, select the number of minutes between outages that you want the HMC to wait before sending a new incident report.
8. Select one or more managed systems from the table in the lower part of the window, then click **Enable** or **Disable**. Surveillance is then either enabled or disabled for the selected managed systems.

Enabling Surveillance Notifications: You can enable or disable surveillance-error notification from this HMC to connected managed systems. Enabling this notification causes errors to be passed to the Service Agent application for notification.

Note: You must further configure Service Agent to handle notifications sent by Service Focal Point. For more information about Service Agent, see the *Hardware Management Console Installation and Operations Guide*, order number SA23-1251.

To set up surveillance, you must be a member of one of the following roles:
- System Administrator
- Service Representative

To set up surveillance-error notification, do the following:
1. In the Navigation area, click the **Service Applications** icon.
2. In the Navigation area, double-click the **Service Focal Point** icon.

3. In the Contents area, select **Service Focal Point Settings**.

4. The Service Focal Point Settings window opens. Select the **Surveillance Notification** tab at the top of the window.

5. Select one or more managed systems from the list, and click **Enable** or **Disable**. Surveillance notification is then either enabled or disabled for the selected managed systems.

Working With Serviceable Events

You can view, add, or update serviceable event information, including error details.

Viewing Serviceable Events: To view serviceable events, you must be a member of one of the following roles:

- System Administrator
- Service Representative
- Advanced Operator
- Operator
- Viewer

To view a serviceable event, do the following:

1. In the Navigation area, click the **Service Applications** icon.

2. In the Navigation area, double-click the **Service Focal Point** icon.

3. In the Contents area, click **Select Serviceable Event**.

4. Designate the set of serviceable events you want to view. When you are finished, click **OK**.

5. The Serviceable Event Overview window opens, and the entries displayed are ordered by time stamp. Each line in the Serviceable Event Overview window corresponds to one error within a serviceable event. On this window, designate the set of serviceable events you want to view by specifying your search criteria (such as event status or error class).

   Note: Only events that match *all* of the criteria that you specify are shown.

6. When you are finished, click **OK**.

When you select a line in the Serviceable Event Overview window, all lines in the same serviceable event are selected. To open the Serviceable Event Details window for the selected event, select the event and click **Event Details**.

Viewing Serviceable Event Details: To view serviceable event details, do the following:

1. Perform the steps in "Viewing Serviceable Events".

2. The Serviceable Event Details window opens, showing extended serviceable event information, including the following:

   - Status
   - Earliest original time stamp of any managed object
   - AIX error log. (The Linux system error log does not place entries into Service Focal Point.)
   - Should this error ever get called home?
   - Error was called home
   - Pointer to extended error-data collection on the HMC

   The window's lower table displays all of the errors associated with the selected serviceable event. The information is shown in the following sequence:

   - Failing device system name
   - Failing device machine type/model/serial
   - Error class
   - Descriptive error text

Viewing Serviceable Event Error Details: To view serviceable event error details, do the following:

1. Perform the steps in "Viewing Serviceable Event Details" on page 7.
2. Select an error in the lower table, and click **Error Details**.

Viewing Service Processor Error Details: To view service processor error details, do the following:

1. Perform the steps in "Viewing Serviceable Event Error Details".
2. If the serviceable event error details you are viewing are for a service processor-class error, the lower table on the resulting window contains service processor errors. Select a service processor error from the lower table, and click **Service Processor Error Details** to see further details.

Saving and Managing Extended Error Data: To save extended error (EE) data, do the following:

1. Perform the steps in "Viewing Serviceable Event Details" on page 7.
2. Click **Save EE Data**. To save extended error data for only *one* error associated with the serviceable event (rather than for the entire serviceable event), select the error from the lower table, and click **Error Details**. In the next menu, click **Manage EE Data**.

Viewing and Adding Serviceable Event Comments: To add comments to a serviceable event, you must be a member of the Service Representative or System Administrator roles.

To add comments to a serviceable event, do the following:

Note: You cannot edit or delete previous comments.

1. Perform the steps in "Viewing Serviceable Event Details" on page 7.
2. Select the error to which you want to add comments to and click **Comments**. If you want to close the event and add comments, click **Close Event** from this window. The Serviceable Event Comments window opens.
3. Type your name and add comments as appropriate. You can also review previous comments, but you cannot edit this information.
4. If you clicked **Comments** on the Serviceable Event Details window, clicking **OK** commits your entry and returns you to the Serviceable Event Details window.

If you clicked **Close Event** on the Serviceable Event Details window, clicking **OK** commits all changes and opens the Update FRU Information window. For more information about updating field replaceable unit information, see "Updating Field Replaceable Unit (FRU) Information".

Closing a Serviceable Event: To close a serviceable event, do the following:

1. Perform the steps in "Viewing Serviceable Event Details" on page 7.
2. Click **Close Event** from this window. The Serviceable Event Comments window opens.
3. Click **OK** to commit your comments. The Update FRU Information window displays. See "Updating Field Replaceable Unit (FRU) Information" for information on completing this window. Click **OK** on the Update FRU Information window to close the serviceable event.

   Note: You must close a serviceable event after it has been serviced to ensure that if a similar error is reported later, it is called home. If an old problem remains open, the new similar problem is reported as a duplicate. Duplicate errors are neither reported nor called home to a service center. Close a serviceable event when the partition that reports the error is active. Closing the event causes the new status of the serviceable event to be correctly sent to the partition.

Updating Field Replaceable Unit (FRU) Information: This task allows you to update the FRU information you changed or modified as a result of this serviceable event. From this panel, you can also activate and deactivate LEDs and search for other serviceable events that contain the same FRU entries.

To update FRU information, do the following:

1. Perform the steps in "Viewing Serviceable Event Details" on page 7.
2. Click **FRU Information**. The Update FRU Information window opens.

   The lower table shows any parts that you have replaced or added during your current update session but that have not been committed to the serviceable event. The changes from the lower table are committed by clicking **OK** or **Apply**.

From this window, you can also activate and deactivate LEDs and search for other serviceable events that contain the same FRU entries.

Replacing an Existing FRU: To replace a part already listed for this serviceable event, do the following:
1. Perform the steps in "Updating Field Replaceable Unit (FRU) Information" on page 8.
2. In the upper table, double-click the part you want to replace.
3. If the FRU has a new part number, type it in the New FRU Part Number field.
4. Click **Replace FRU**. The Update FRU Information window displays the FRU replacement information in the lower table. Click **OK** or **Apply** to commit the changes to the serviceable event.

Adding a New FRU: You can add a part to the serviceable event that was not listed in the upper table of the Update FRU Information window. To add a new FRU for this serviceable event, do the following:
1. Perform the steps in "Updating Field Replaceable Unit (FRU) Information" on page 8.
2. Click **Add New FRU**.
3. Type the FRU's location code and its part number in the appropriate fields.
4. Click **Add to List**. The Update FRU Information window opens and displays the newly added FRU in the lower table.
5. Click **OK** or **Apply** to commit these changes to the serviceable event.

   Note: After you click **OK** or **Apply**, you cannot change this information. If you clicked the **Close Event** button in the Serviceable Event Details window, then clicking **OK** also completes the close dialog and changes the status of the serviceable event to *Closed*.

Viewing Serviceable Event Partition Information: You can view partition information associated with this serviceable event. This information includes each affected partition's state and resource use.
1. Perform the steps in "Viewing Serviceable Event Details" on page 7.
2. Click **Partition Information**.

Activating and Deactivating FRU LEDs
This task allows you to activate or deactivate a managed system's system attention LED or any FRU LED. FRU LEDs are helpful in determining which FRUs need servicing.

To activate or deactivate a managed system's System Attention LED, do the following:
1. In the Navigation area, click the **Service Applications** icon.
2. In the Navigation area, double-click the **Service Focal Point** icon.
3. In the Contents area, select **Hardware Service Functions**. The LED Management window opens.
4. In the LED Management window, select one or more managed systems from the table.
5. Select either **Activate LED** or **Deactivate LED**. The associated System Attention LED is then either turned on or off.

To activate or deactivate a FRU associated with a particular managed system, do the following:
1. In the Navigation area, click the **Service Applications** icon.
2. In the Navigation area, double-click the **Service Focal Point** icon.
3. In the Contents area, click **Hardware Service Functions**. The LED Management window opens.
4. In the LED Management window, select one managed system from the table.

5. Click the **List FRUs...** button. The list of FRU slot indexes and their respective current LED states display.
6. Select one or more FRU slot indexes.
7. Click either the **Activate LED** or the **Deactivate LED** button.

The associated FRU LEDs are now either enabled (blinking) or off.

Powering the System On and Off

For complete procedures to power on and power off the system in various system configurations running various operating systems, see "Powering the System On" on page 748.

406/70 Data Flow

The following figure shows the data flow for the system.
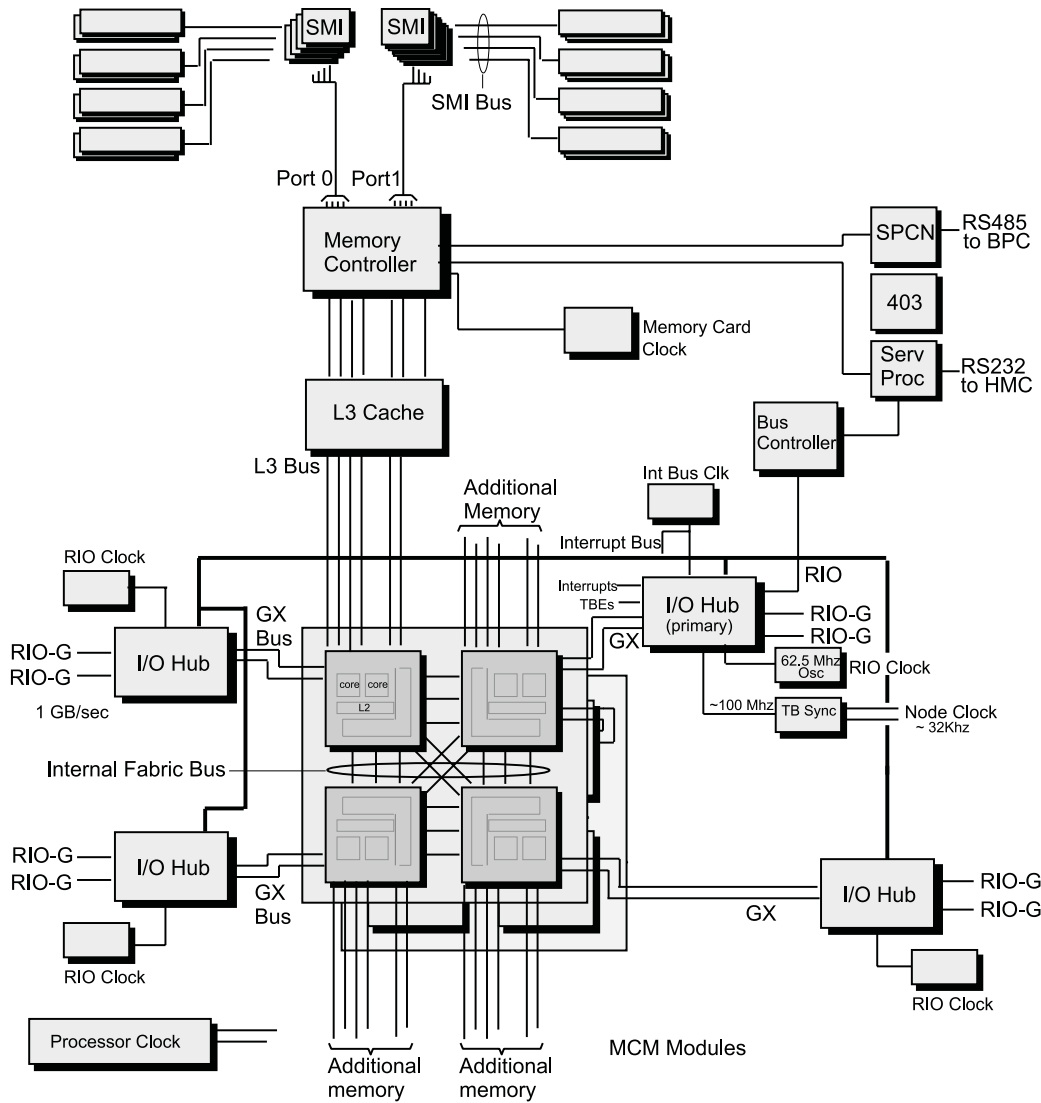
Power-On Self-Test

After power is turned on and before the operating system is loaded, the partition does a power-on self-test (POST). This test performs checks to ensure that the hardware is functioning correctly before the operating system is loaded. During the POST, a POST screen displays, and POST indicators display on the virtual terminal. The next section describes the POST indicators and functions that can be accessed during the POST.

POST Indicators

POST indicators indicate tests that are being performed as the partition is preparing to load the operating system. The POST indicators are words that display on the virtual terminal. Each time that the firmware starts another step in the POST, a POST indicator word displays on the console. The POST screen displays the following words:

Memory   Memory test

Keyboard   Initialize the keyboard and mouse. The time period for pressing a key to access the System Management Services, or to initiate a service mode boot is now open. See "POST Keys" for more information.

Network   Self-test on network adapters

SCSI   Adapters are being initialized

Speaker   Sounds an audible tone at the end of POST

POST Keys

The POST keys, if pressed *after* the **keyboard** POST indicator displays and *before* the last POST indicator (**speaker**) displays, cause the system to start services or boot modes used for configuring the system and diagnosing problems. The system will beep to remind you to press the POST key (if desired) at the appropriate time. The keys are described as follows:

1 Key

The numeric 1 key, when pressed during POST, starts the System Management Services (SMS) interface.

5 Key

The numeric 5 key, when pressed during POST, initiates a partition boot in service mode using the default service mode boot list.

This mode attempts to boot from the first device of each type found in the list. It does not search for other bootable devices of that type if the first device is not bootable. Instead, it continues to the next device type in the list. The firmware supports up to five entries in the boot list.

The default boot sequence is:
1. Diskette
2. CD-ROM
3. Hard file
4. Tape drive (if installed)
5. Network
   a. Token ring
   b. Ethernet

6 Key

The numeric 6 key works like the numeric 5 key, except that firmware uses the customized service mode boot list, which can be set in the AIX service aids.

8 Key

To enter the open firmware command line, press the numeric 8 key *after* the word **keyboard** displays and before the last word (**speaker**) displays during startup. After you press the 8 key, the remaining POST indicators display until initialization completes.

This option is used only by service personnel to collect additional debug information.

To exit from the open firmware command prompt, type **reset-all** or power off the system and reboot.

406/70 System Locations

The 406/70 system consists of a minimum of four subsystems in one rack as follows:
- Processor subsystem
- Media subsystem
- One I/O subsystem
- Power subsystem

These components are connected by cables that transmit data and control signals. I/O subsystems can be added if further expansion of the system is required (up to two additional I/O subsystems).

In each of the following figures, the minimum system configuration is shown on the left. The minimum system configuration with the integrated battery feature (IBF) is shown on the right in each of the figures.

1	Rack	**5**	Media Subsystem
2	Bulk Power Assembly	**6**	Optional Integrated Battery Feature
3	UEPO Switch	**7**	First I/O subsystem
4	Memory Books		
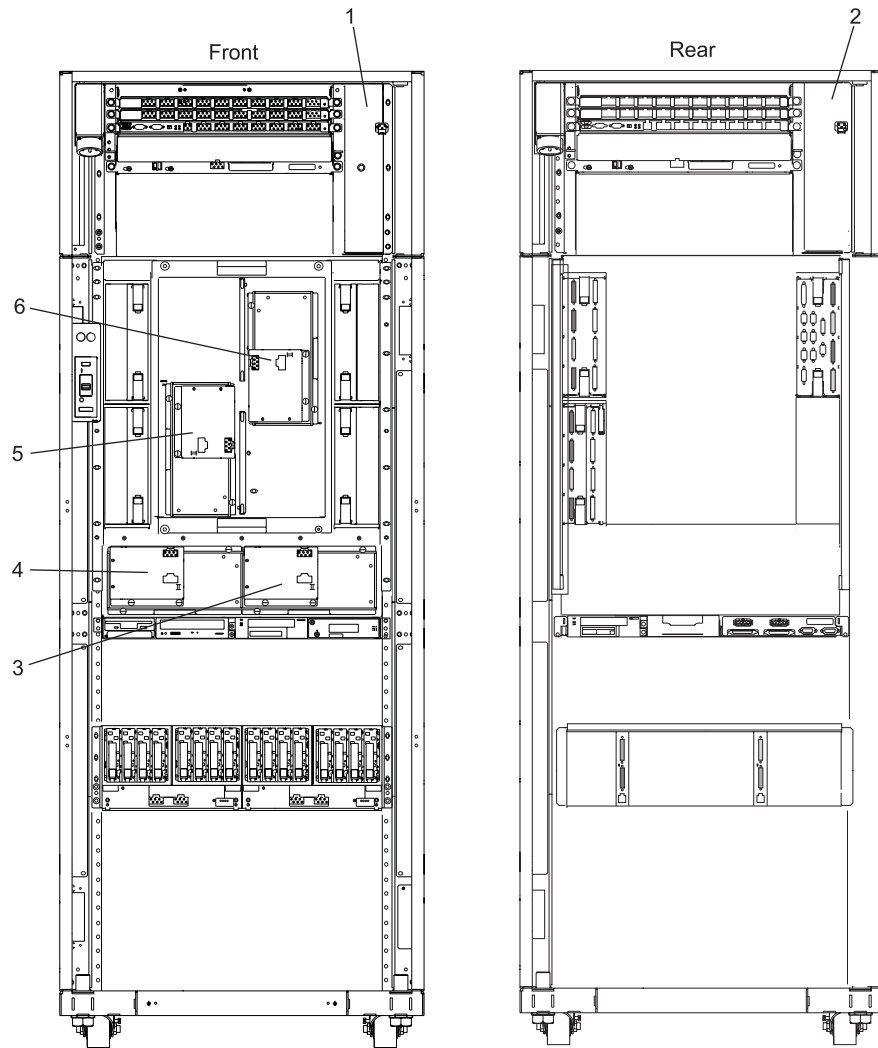
1	BPA Fan (U1.35-P1-F1)	**4**	Processor Subsystem Fan 1, (U1.18-F1)
2	BPA Fan (U1.35-P2-F1)	**5**	Processor Subsystem Fan 3, (U1.18-F3)
3	Processor Subsystem Fan 2, (U1.18-F2)	**6**	Processor Subsystem Fan 4, (U1.18-F4)

Note: The I/O subsystem fan assemblies are inside the I/O subsystems, positioned from left to right behind the DASD 4-packs in order of fan assembly 1, fan assembly 2, fan assembly 3, and fan assembly 4.

UEPO Switch

The UEPO (Unit Emergency Power Off) switch is accessible through the external cover. The switch contains a room emergency power off (EPO) interlock connector and bypass switch, a dual element rack service amber LED (one element driven per bulk power controller, a service complete button (white) and start service button (green), an off button and four thermistors for BPC ambient temperature sensing. The UEPO switch is shown in the following figure.
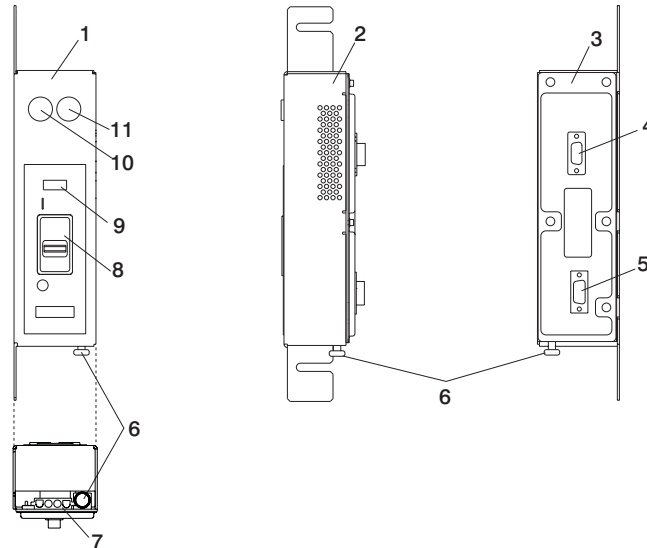
1	UEPO Front Panel	**7**	J02 Connector
2	UEPO Side Panel	**8**	Power Switch
3	UEPO Rear Panel	**9**	System Fault LED
4	J00 Connector Front BPA (Back)	**10**	Start Service Button (Green)
5	J01 Connector Rear BPA (Back)	**11**	Service Complete Button (White)
6	Room EPO Bypass Interlock		

The UEPO switch disables 350 V bulk power conversion and isolates all battery power to the battery compartments, without having to disconnect the heavy power cords under the customer's raised floor.

At the system level, the UEPO switch is connected to each of the two BPCs through two interface connectors. The switch can be concurrently replaced by forcing the BPCs into UEPO bypass mode, using the small slide switches on the face of the BPCs. The switch is mounted in the side pocket area of the rack and remains stationary when the front cover of the system is opened. The service buttons are used by service personnel to repair the power subsystem. If the system is off when the service complete button is pressed, the system will power on. A sliding plastic cover over the red switch prevents it from being accidentally activated in the customer environment.

406/71 Processor Subsystem Locations

This section provides a front view and a rear view of the processor subsystem with descriptions and locations for each part of the processor subsystem. Detailed location information for processor subsystem I/O books is also included.

406/71 Processor Subsystem Front View

Note: For slot assignments, see "Memory to Processor Relationships" on page 46.
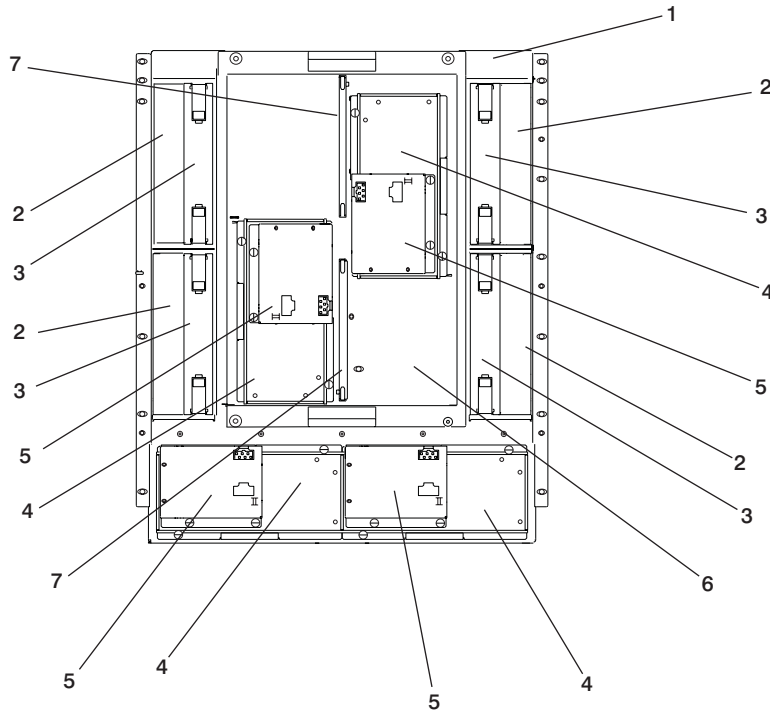
1	Processor Subsystem Chassis	**5**	Fan Controller
2	Blank Cover	**6**	Fan Chassis
3	Inner Memory Book	**7**	Fan Filter
4	Fan		

406/71 Processor Subsystem Rear View
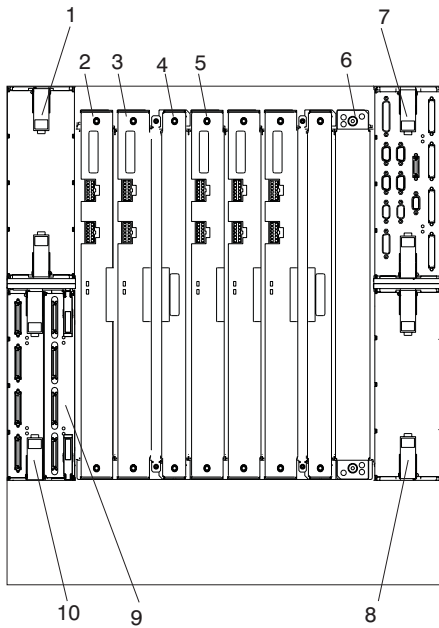
1	I/O Book – Slot 1	**8**	Reserved
2	DCA Book 1	**9**	I/O Book 2 - Slot 2 (Inner Connectors)
3	DCA Book 2	**10**	I/O Book 2 - Slot 2 (Outer Connectors)
4	Capacitor Book		
5	DCA Book 3		
6	Reserved		
7	I/O book - Slot 0		

I/O Book Connector Locations
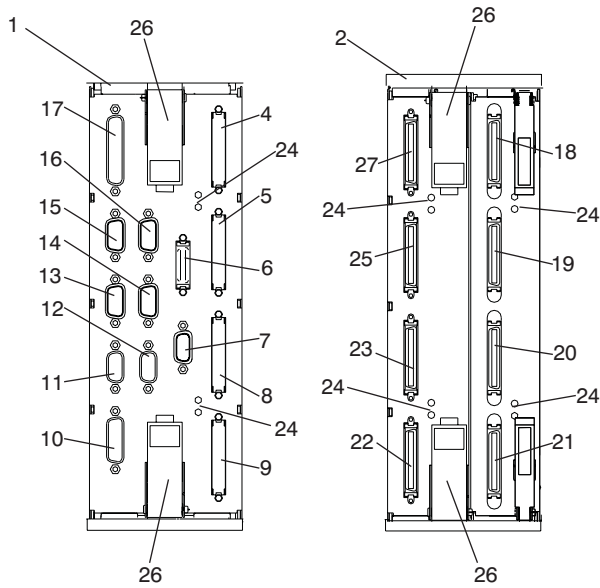
1	Primary I/O Book, Slot 0 (U1.18-P1-H2)	**17**	Debug (Manufacturing use only)
2	Secondary I/O Book, Slot 1 (U1.18-P1-H1), Slot 2 (U1.18-P1-H3)	**18**	I/O Port 3 (D1) (U1.18-P1-H3/Q5)
3	Reserved	**19**	I/O Port 3 (D0) (U1.18-P1-H3/Q6)
4	I/O Port 0 (A0) (U1.18-P1-H2/Q1)	**20**	I/O Port 2 (C1) (U1.18-P1-H3/Q7)
5	I/O Port 0 (A1) (U1.18-P1-H2/Q2)	**21**	I/O Port 2 (C0) (U1.18-P1-H3/Q8)
6	Operator Panel (U1.18-P1-H2/Q7)	**22**	Unused
7	BPC Y-cable* connector U1.18-P1-H2/Q8 or U1.18-P1-H2/Q9	**23**	Unused
8	I/O Port 1 (B0) (U1.18-P1-H2/Q3)	**24**	Indicator LEDs
9	I/O Port 1 (B1) (U1.18-P1-H2/Q4)	**25**	Unused
10	Diskette Drive (U1.18-P1-H2/Q10)	**26**	Camming Latches
11	HMC 1 (U1.18-P1-H2/S3)	**27**	Unused
12	HMC 2 (U1.18-P1-H2/S4)		
13	Serial Port 1 (U1.18-P1-H2/S1)		
14	Serial Port 2 (U1.18-P1-H2/S2)		
15	SPCN 0 (Manufacturing use only) (U1.18-P1-H2/Q5)		
16	SPCN 1 (Manufacturing use only) (U1.18-P1-H2/Q6)		

* The Y-cable that attaches to this connector, terminates at BPC-A connector U1.35-P1-X4/Q10 and BPC-B connector U1.35-P2-X4/Q10.

Media Subsystem Locations

The following figures show locations for devices installed in the media subsystem, and the SCSI IDs for the media devices.

Note: The SCSI IDs shown for media indicate how installed devices are set when shipped from the factory.

Media Subsystem Front View
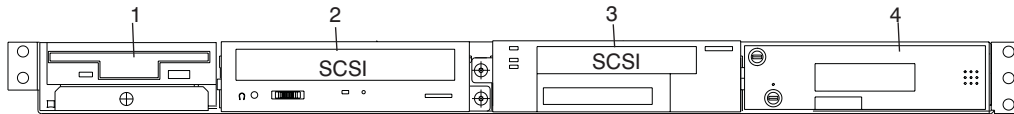
1	Diskette Drive	**3**	Optional Media Drive (4 mm Tape, CD-ROM, or DVD-RAM), SCSI Address 06
2	CD-ROM Drive, SCSI Address 05	**4**	Operator Panel

Media Subsystem Rear View

Note: DVD-RAM and 4-mm tape drives can be located in the rear of the media subsystem *only* if the room is maintained at a nominal room temperature of 24C (75.2F).

1	Optional Media (4-mm Tape, CD-ROM, or DVD-RAM), SCSI Address 05	**5**	Front SCSI Power Connection
2	Optional Media (4-mm Tape, CD-ROM, or DVD-RAM), SCSI Address 06	**6**	Front SCSI Connection
3	Rear SCSI Power Connection	**7**	Diskette Drive Connection
4	Rear SCSI Connection	**8**	Operator Panel Connection

Media Subsystem Operator Panel
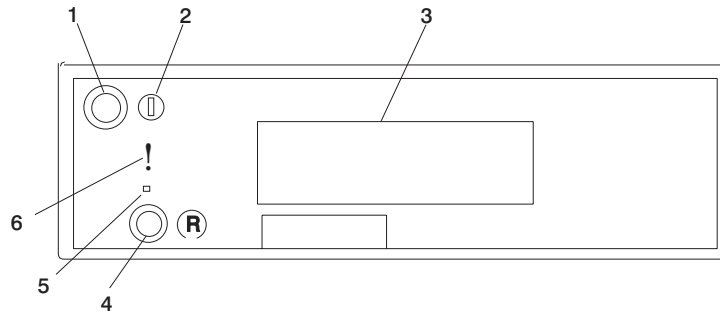
1	Power on/off button	**4**	Reset button
2	Power on/off LED	**5**	Service processor reset button (Service use only)
3	Operator panel display	**6**	Disturbance or system attention LED

Note: You must activate the service processor reset button very carefully. Using an insulated paper clip is recommended. Unbend the clip so that it has a straight section about two inches long. Insert the clip straight into the hole, keeping the clip perpendicular to the plastic bezel. When you engage the test reset switch, you should feel the detent of the switch. After you press the switch, the service processor resets and then shuts down the system.

Disturbance or System Attention LED

The system attention LED lights on solid when an event occurs that either needs customer intervention or service. The system attention LED is turned on when an entry is made in the service processor error log. The error entry is transmitted to the following:

* System-level error logs
* the operating system error log
* As an entry in the service action event log in the Service Focal Point application. For example, the loss of surveillance from the HMC to a logical partition.

Continue to the following appropriate system error interrogation section.

Accessing System Log Error Information

Note: The system attention LED can be reset by following the procedures described in "Resetting the System Attention LED" on page 22.

When an error or potential problem is detected by the system, the attention LED on the operator panel is turned on. Information about the error or potential problem is stored in error logs. The following sections explain how to access the logs that are available on a system. The error logs are accessed from the console that is used to manage the system. From the following console descriptions, go to the instructions under the heading that best describes the system on which you are working:

* "Accessing Errors when a System is Attached to an HMC".
* "Accessing Errors when a System is Running AIX and the Console is Not an HMC" on page 22.
* "Accessing Errors when a System is Running Linux and the Console is Not an HMC" on page 22.

Accessing Errors when a System is Attached to an HMC
If the system attention LED comes on and the system is attached to an HMC for its console, do the following to access the error logs:

1. Open the Service Action Event Log in the Service Focal Point application on the HMC.

2. Check the open service events using the procedure described in ″Working with Serviceable Events″ in the *Hardware Management Console Installation and Operations Guide*.

Note: For information on these Service Focal Point settings, see ″Setting Up Surveillance and Enabling Surveillance Notifications″ in the *Hardware Management Console Installation and Operations Guide*.

Events requiring customer intervention are marked `Call Home Candidate? NO`. For each of these events, examine the description in the serviceable event error details. If actions are listed in the description, perform those actions. If the error indicates a loss of surveillance between the HMC and a partition, check the status of the partition, the network, and the cabling between the HMC and the partition. Correct any problems found. If a surveillance problem is still indicated, call service support.

If the service action event is labeled `Call Home Candidate? YES`, an error code is supplied to identify the problem. If the system is configured to automatically call home on error, the request for service is placed. If the system is not configured to automatically call home, you should place a call to service support.

If the system attention LED comes on and an HMC is used to manage the system, do one of the following:
- If you performed "Step 1321-43" on page 129 in "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122, return to "Step 1321-43" on page 129 to process any other error codes or symptoms.
- If you have not performed any of the steps in "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122, go to step "Step 1321-1" on page 122 and perform the procedures in the MAP.

Accessing Errors when a System is Running AIX and the Console is Not an HMC
If the system attention LED comes on and the system is running AIX and the console is not an HMC, do the following to access the error logs:
1. If the system is operational, examine the AIX error log to see if user intervention is required.
2. If the system is powered off, examine the service processor error log for entries.
3. If the AIX error log indicates service support is required, or there are entries in the service processor error log, go to "Entry MAP" on page 107 with the information noted from the error log.

Accessing Errors when a System is Running Linux and the Console is Not an HMC
If the system attention LED comes on and the system is running Linux and is not attached to an HMC, do one of the following:
- If you performed "Step 1321-43" on page 129 in "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122, return to "Step 1321-43" on page 129 to process any other error codes or symptoms.
- If you have not performed any of the steps in "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122, go to step "Step 1321-1" on page 122 and perform the procedures in the MAP.

Resetting the System Attention LED
Choose one of the following procedures to reset your attention LED.

Resetting the LED when a System is Attached To an HMC
To reset the system attention LED on HMC-attached systems, do the following:
1. On the HMC graphical interface, click **Service Applications**.
2. Double-click **Service Focal Point**.
3. In the Contents area of the screen, select **Hardware Service Functions**. The LED Management window opens.

4. In the LED Management window, select one or more managed systems from the table.

5. Select **Deactivate LED**. The associated system attention LED is turned off.

For more information about the virtual operator panel on the HMC, see the *Hardware Management Console Installation and Operations Guide*.

Resetting the LED when a System is Running AIX and the Console is not an HMC

As a user with root authority, type `diag` on the AIX command line, and do the following:

1. Select **Task Selection**.

2. On the Task Selection Menu, select **Identify and Attention Indicators**.

3. When the list of LEDs displays, use the cursor to highlight **Set System Attention Indicator to Normal**.

4. Press Enter, and then press F7 to commit. This action turns off the LED.

If the system is powered off, access the service processor menus. From the service processor main menu, do the following:

1. Select **System Information Menu**.

2. Select **LED Control Menu**.

3. Select **Clear System Attention Indicator**. This action turns off the LED.

Resetting the LED when a System is Running Linux and the Console is not an HMC

The system must be powered off to access the service processor menus. From the service processor main menu, do the following:

1. Select **System Information Menu**.

2. Select **LED Control Menu**.

3. Select **Clear System Attention Indicator**. This action turns off the LED.

406/1D I/O Subsystem Locations

This section shows the locations for the I/O subsystem. A front view and a rear view with descriptions and locations for each part of the I/O subsystem are shown.

406/1D I/O Subsystem Front View
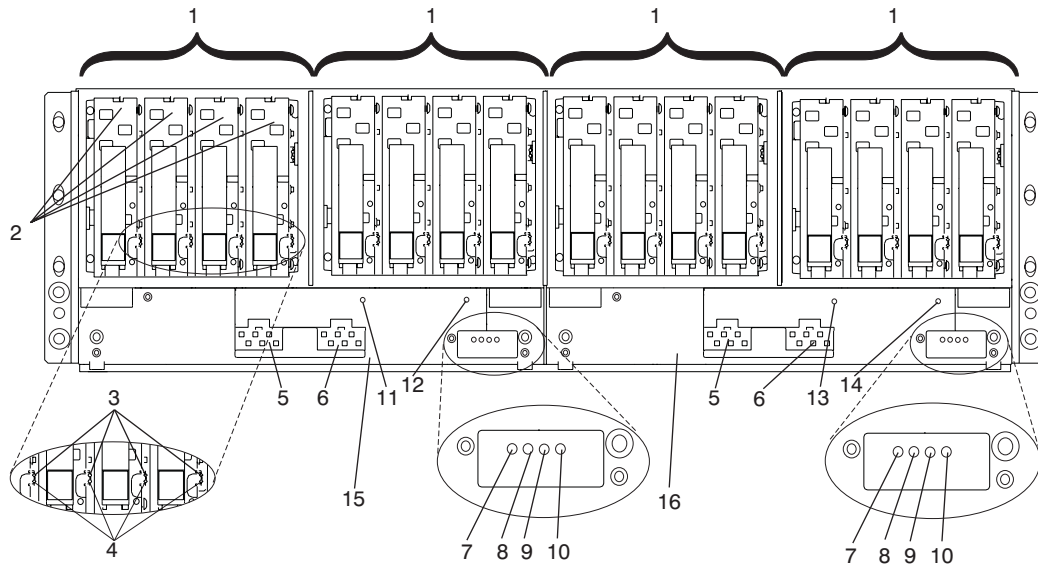
1	DASD 4-Pack	**9**	Drawer Fault/Identify LED (Amber)
2	DASD Disk Drive	**10**	Power Good Out LED (Green)
3	Disk Activity LED (Green)	**11**	Fan Fault LED (Amber) Ux.y-F1
4	Disk Drive Fault/Identify LED (Amber)	**12**	Fan Fault LED (Amber) Ux.y-F3
5	BPD 1 (Front) Cable In	**13**	Fan Fault LED (Amber) Ux.y-F2
6	BPD 2 (Rear) Cable In	**14**	Fan Fault LED (Amber) Ux.y-F4
7	Power Good In LED (Green)	**15**	I/O Subsystem Left DCA Ux.y-V1
8	DCA Fault LED (Amber)	**16**	I/O Subsystem Right DCA Ux.y-V2

Note: The fan fault LEDs shown in the preceding illustration indicate if an internal fan has a fault. The fan assemblies inside are positioned from left to right behind the DASD 4-packs in order of fan assembly 1, fan assembly 2, fan assembly 3, and fan assembly 4.

406/1D I/O Subsystem Rear View
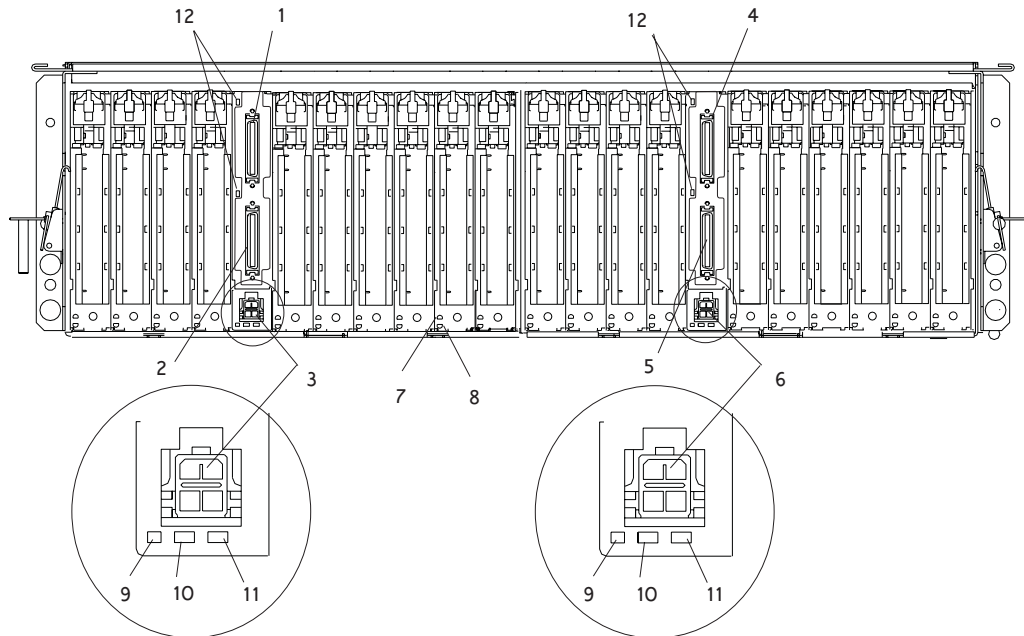
1	I/O port connector 1 (Ux.y-P1/Q2)	7	I/O Card Power On LED (Green)
2	I/O port connector 0 (Ux.y-P1/Q1)	8	I/O Adapter Fault/Identify LED (Amber/Bottom)
3	Media subsystem power connector (Ux.y-P1-V1/Q3)	9	Auxiliary Power Good (Green)
4	I/O port connector 1 (Ux.y-P2/Q2)	10	I/O Subsystem Backplane Fault (Amber)
5	I/O port connector 0 (Ux.y-P2/Q1)	11	I/O Subsystem Backplane Power On (Green)
6	Media subsystem power connector (Ux.y-P2-V1/Q3)	12	I/O LED (Currently Unused)

I/O Subsystem DASD Locations

The following figures show the DASD drive positions in an I/O subsystem.

Note: The SCSI IDs are set when the drive is installed into the DASD 4-pack.

406/1D I/O Subsystem DASD Locations
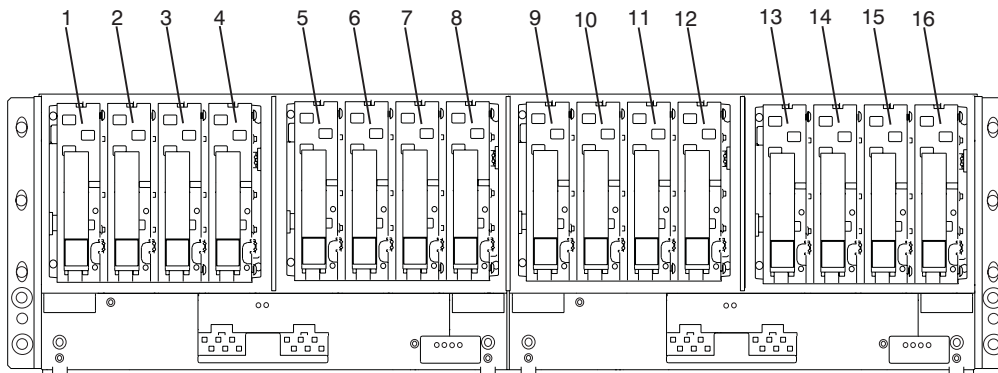
1	Ux.y-P2/Z2-A8	9	Ux.y-P1/Z2-A8
2	Ux.y-P2/Z2-A9	10	Ux.y-P1/Z2-A9
3	Ux.y-P2/Z2-Aa	11	Ux.y-P1/Z2-Aa

4	Ux.y-P2/Z2-Ab	**12**	Ux.y-P1/Z2-Ab
5	Ux.y-P2/Z1-A8	**13**	Ux.y-P1/Z1-A8
6	Ux.y-P2/Z1-A9	**14**	Ux.y-P1/Z1-A9
7	Ux.y-P2/Z1-Aa	**15**	Ux.y-P1/Z1-Aa
8	Ux.y-P2/Z1-Ab	**16**	Ux.y-P1/Z1-Ab

Notes:

1. In the preceding table, x is equal to the rack number and y is equal to the I/O subsystem position in the rack. The SCSI ID for each drive is set when the drive is installed. Each I/O subsystem can have up to four DASD 4-packs installed. The SCSI IDs for the drives in each 4-pack are 8, 9, a, and b, from left to right.

2. The DASD attachment locations are as follows:
   - DASD 1, 2, 3, 4 are attached to Ux.y-P3 DASD backplane.
   - DASD 5, 6, 7, 8 are attached to Ux.y-P4 DASD backplane.
   - DASD 9, 10, 11, 12 are attached to Ux.y-P5 DASD backplane.
   - DASD 13, 14, 15, 16 are attached to Ux.y-P6 DASD backplane.

I/O Subsystem PCI and PCI-X PHB and PCI and PCI-X Slot Locations

PHB 1	PHB 2	PHB 3	PHB 1	PHB 2	PHB 3
Loc. Codes	Loc. Codes	Loc. Codes	Loc. Codes	Loc. Codes	Loc. Codes
Ux.y-P1-I1	Ux.y-P1-I5	Ux.y-P1-I8	Ux.y-P2-I1	Ux.y-P2-I5	Ux.y-P2-I8
Ux.y-P1-I2	Ux.y-P1-I6	Ux.y-P1-I9	Ux.y-P2-I2	Ux.y-P2-I6	Ux.y-P2-I9
Ux.y-P1-I3	Ux.y-P1-I7	Ux.y-P1-I10	Ux.y-P2-I3	Ux.y-P2-I7	Ux.y-P2-I10
Ux.y-P1-I4			Ux.y-P2-I4		
	Ux.y-P1-Z1 (integrated SCSI)	Ux.y-P1-Z2 (integrated SCSI)		Ux.y-P2-Z1 (integrated SCSI)	Ux.y-P2-Z2 (integrated SCSI)
64-bit 3.3V	64-bit 3.3V	64-bit 5V	64-bit 3.3V	64-bit 3.3V	64-bit 5V
33/66 MHz	33/66 MHz	33MHz	33/66MHz	33/66 MHz	33MHz

Ux.y - HMC location code reference wherein x = rack location and y = drawer position.

PHBs 2 and 3 on both planars contain integrated SCSI adapters (slots P1-Z1, P1-Z2, P2-Z1, P2-Z2).

I/O and Media Subsystem Connections

I/O Subsystem Rear

10 slots   10 slots

Media Subsystem Power

SCSI

Media Subsystem Front

I/O Planar

RIO Bus

4 DASD Bays   4 DASD Bays

RIO-PCI Bridge

32

PCI- PCI Bridge   PCI- PCI Bridge   PCI- PCI Bridge

Internal SCSI Controllers

Ultra3 SCSI   SES   Ultra3 SCSI   SES

☐ PCI Slot - 64 bit 66/33mhz 3.3V
☐ PCI Slot - 64 bit 33mhz 5.0V
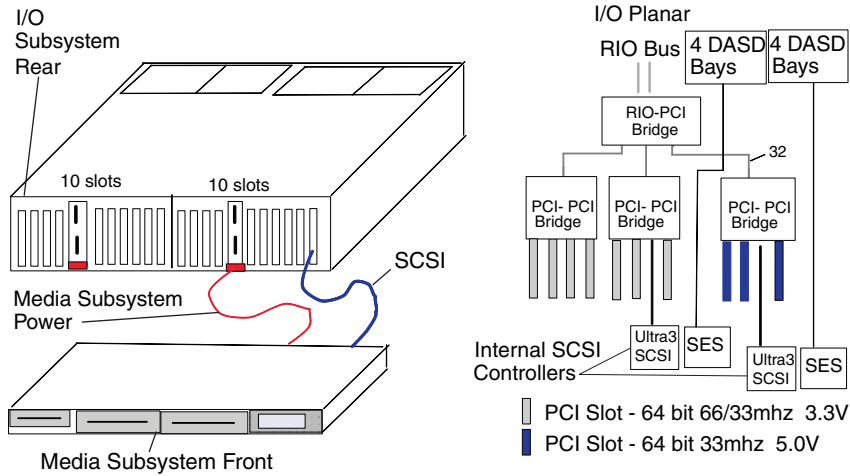
I/O Subsystem Internal SCSI Distribution

P1

Rear

P2

P   IS   DASD 4 pack

RP

P

P   IS   DASD 4 pack

P   IS   DASD 4 pack

RP

P

P   IS   DASD 4 pack

P=PCI-PCI bridge

RP=RIO-PCI bridge

IS=Internal SCSI Ultra 3

I/O Subsystem Power Distribution

BPA

P1

IS

P

RP

P

IS

P

Fan 4

DCA 2
Power Supply

Fan 2

Rear

P2

IS

P

RP

P

IS

P

Fan 3

Fan 1

DCA 1
Power Supply

P=PCI-PCI Bridge
RP=RIO-PCI Bridge
IS=Internal SCSI Ultra 3

Midplane

BPA

Power Subsystem Locations

								BPD (1)		
I/O - 1A P00	I/O - 1B P01	I/O - 2A P02	I/O - 2B P03	I/O - 3A P04	I/O - 3B P05	I/O - 4A P06	I/O - 4B P07	DCA - 4 P08	DCA - 5 P09	
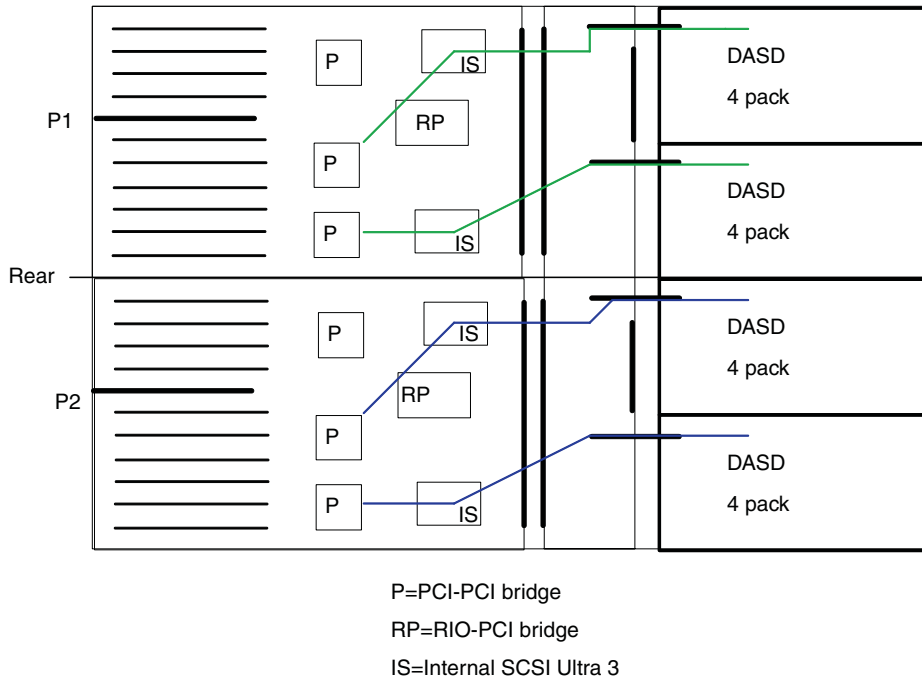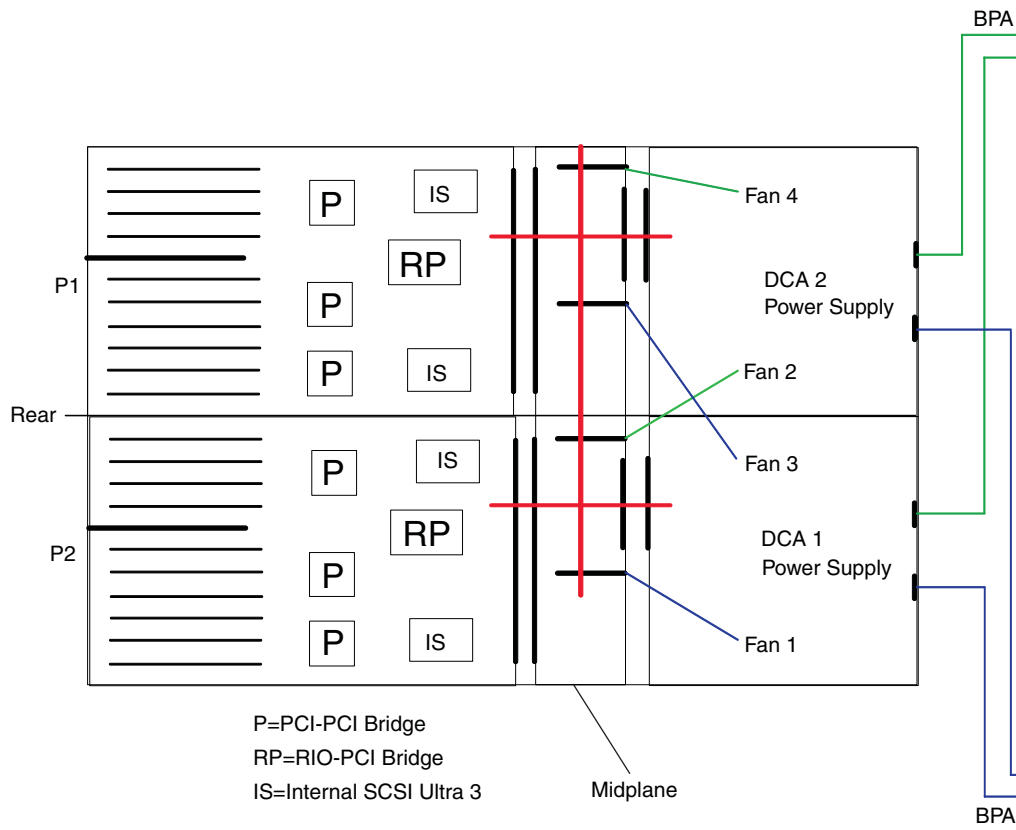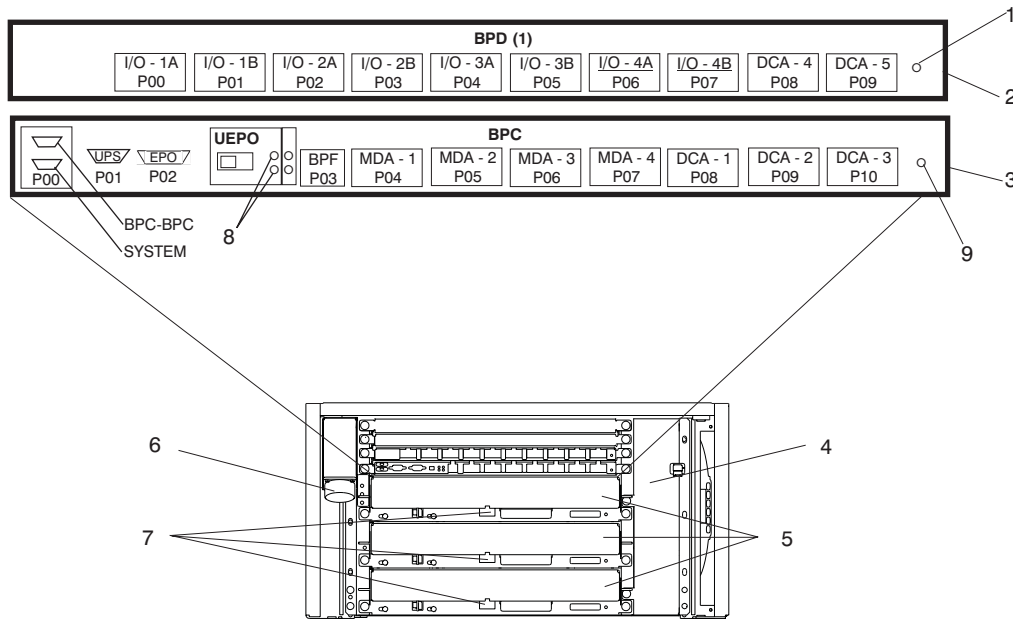
1 BPD Power Good LED   **6** ac Power In Connector
2 Bulk Power Distributor (BPD)   **7** Connectors to IBF
3 Bulk Power Controller (BPC)   **8** UEPO Power (PWR) LED
                                         UEPO Power Complete (CMPLT) LED
4 Bulk Power Fan (BPF)   **9** BPC Power Good LED
5 Bulk Power Regulators (BPR)

Power Distribution Cabling

Power to the I/O subsystems, DCAs, Fans, and IBFs is connected from the bulk power distribution connectors to each subsystem through cables. The cable connectors are labeled on each end. The following describes the cables that connect from the BPC BPDs, and BPRs to the DCAs, fans, power supplies, I/O subsystems, and integrated battery features.
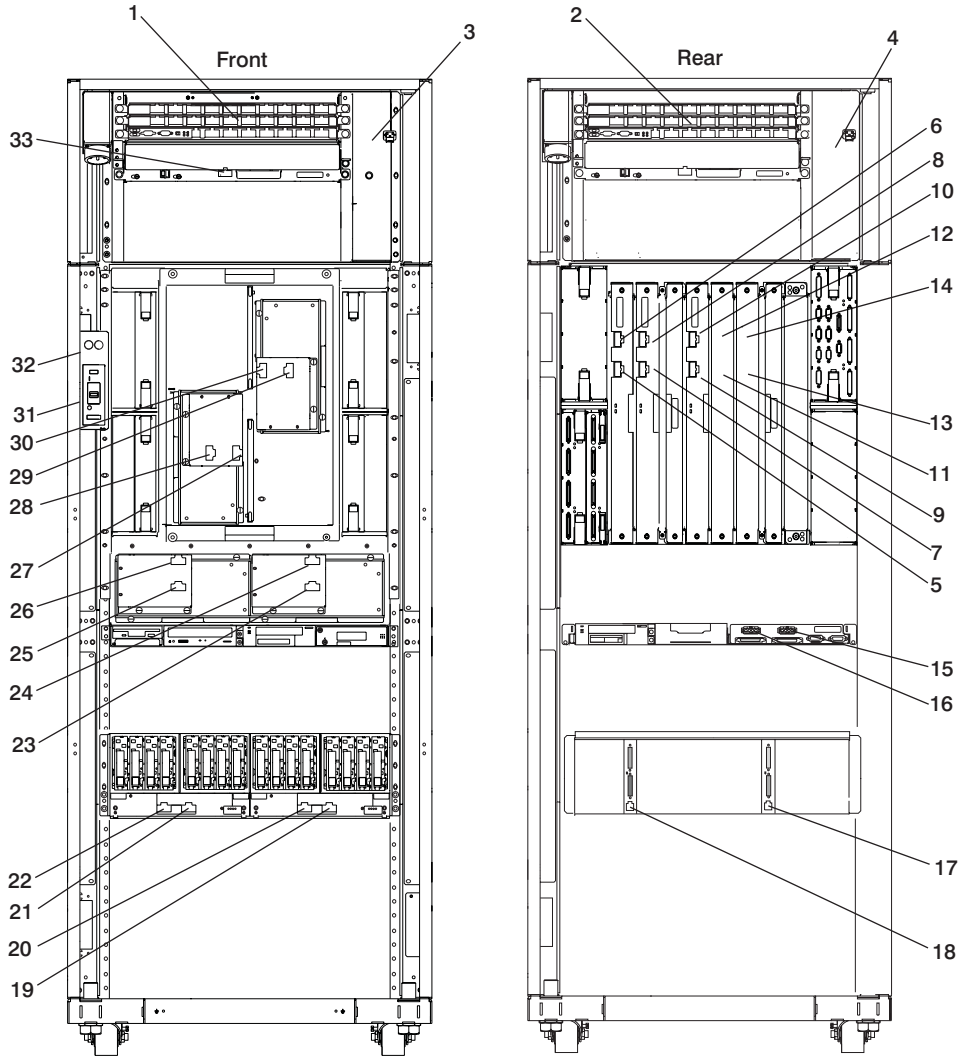
Key	From	To	Description	Label Color
1	Bulk Power BPE A Side		Bulk power enclosure on the A side of the system	
2	Bulk Power BPE B Side		Bulk power enclosure on the B side of the system	
3	A35-BPC-J03	A35-P1FAN (BPF-A)	A35-BPC-P03 to Bulk Power Fan P1-F1	Red with white stripe
4	B35-BPC-J03	B35-P2FAN (BPF-B)	B35-BPC-P03 to Bulk Power Fan P2-F1	Red
5	B35-BPC-J08	DCA-1 J01	B35-BPC-P08 to DCA-1-P01	Red
6	A35-BPC-J08	DCA-1 J00	A35-BPC-P08 to DCA-1-P00	Red with white stripe
7	B35-BPC-J09	DCA-2 J01	B35-BPC-P09 to DCA-2-P01	Red
8	A35-BPC-J09	DCA-2 J00	A35-BPC-P09 to DCA-2-P00	Red with white stripe
9	B35-BPC-J10	DCA-3 J01	B35-BPC-P10 to DCA-3-P01	Red
10	A35-BPC-J10	DCA-3 J00	A35-BPC-P10 to DCA-3-P00	Red with white stripe
11	Unused	DCA-4 J01Unused	B35-BPD1-P08 to DCA-4-P01Unused	RedUnused
12	Unused	Unused	Unused	Unused
13	Unused	Unused	Unused	Unused
14	Unused	Unused	Unused	Unused
15, 17	B17-Media-J02	I/O Subsystem 1B-J01	I/OB9-P01 to Media P02	
16, 18	B17-Media-J00	I/O Subsystem 1B-J00	I/OB9-P00 to Media P00	
19, 20, 21, 22	B35-BPDx-Jxx See "I/O Subsystem Power Distribution Cabling" on page 33 for I/O subsystem power cabling.	I/O Subsystem See "I/O Subsystem Power Distribution Cabling" on page 33 for I/O subsystem power cabling.	B35-BPDx-P0x to I/O Subsystem #x	
23	B35-BPC-J05	A09-MDA2-J02	A35-BPC-P05 to (AMD2-P01) J02	Red
24	A35-BPC-J05	A09-MDA2-J01	B35-BPC-P05 to (AMD2-P00) J01	Red with white stripe
25	B35-BPC-J04	A09-MDA1-J02	A35-BPC-P04 to (AMD1-P01) J02	Red
26	A35-BPC-J04	A09-MDA1-J01	A35-BPC-P04 to (AMD1-P00) J01	Red with white stripe
27	A35-BPC-J06	A18-MDA3-J01	A35-BPC-P06 to (AMD3-P00) J01	Red with white stripe
28	B35-BPC-J06	A18-MDA3-J02	B35-BPC-P06 to (AMD3-P01) J02	Red
29	B35-BPC-J07	A18-MDA4-J02	B35-BPC-P07 to (AMD4-P00) J02	Red

Key	From	To	Description	Label Color
30	A35-BPC-J07	A18-MDA4-J01	B35-BPC-P07 to (AMD4-P01) J01	Red with white stripe
31	B35-BPC-J02	UEPO Switch J01	B35-BPC-P02 to UEPO J01	Red
32	A35-BPC-J02	UEPO Switch J00	A35-BPC-P02 to UEPO J00	Red with white stripe
33	A35-BPR-J00	A13-IBF1-J01	A35-BPR-P00 to A13-IBF1-P00	
	B35-BPR-J00	B13-IBF1-J01	B35-BPR-P00 to B13-IBF1-P00	

I/O Subsystem Power Distribution Cabling

Power to the I/O subsystems is connected from the bulk power distribution connectors to each subsystem through cables. The cable connectors are labeled on each end. The following table describes the cables that connect from the BPDs to the I/O Subsystem DCAs (power supplies).

From	To (A=Primary)	Description	Label Color
A35B-BPD1A-P00	A09B-DCA1-P01	BPD1A to I/O Subsystem #1	Purple With Stripes
A35P-BPD1B-P00	A09B-DCA1-P00	BPD1B to I/O Subsystem #1	Purple
A35B-BPD1A-P01	A09B-DCA2-P01	BPD1A to I/O Subsystem #1	Purple With Stripes
A35P-BPD1B-P01	A09B-DCA2-P00	BPD1B to I/O Subsystem #1	Purple
A35B-BPD1A-P02	A05B-DCA1-P01	BPD1A to I/O Subsystem #2	Yellow With Stripes
A35P-BPD1B-P02	A05B-DCA1-P00	BPD1B to I/O Subsystem #2	Yellow
A35B-BPD1A-P03	A05B-DCA2-P01	BPD1A to I/O Subsystem #2	Yellow With Stripes
A35P-BPD1B-P03	A05B-DCA2-P00	BPD1B to I/O Subsystem #2	Yellow
A35B-BPD1A-P04	A01B-DCA1-P01	BPD1A to I/O Subsystem #3	Green With Stripes
A35P-BPD1B-P04	A01B-DCA1-P00	BPD1B to I/O Subsystem #3	Green
A35B-BPD1A-P05	A01B-DCA2-P01	BPD1A to I/O Subsystem #3	Green With Stripes
A35P-BPD1B-P05	A01B-DCA2-P00	BPD1B to I/O Subsystem #3	Green

Integrated Battery Feature Locations
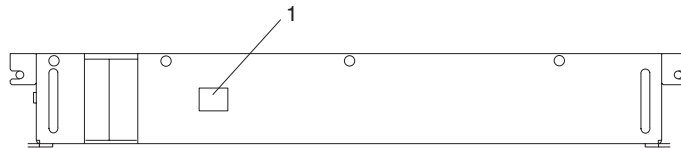
1   Connector to BPR

Subsystem Positioning and Cabling

This section describes subsystem positioning and cabling for the 406/70406/70.

Operator Panel Cable and Diskette Drive Cable to the Media Subsystem (Rear View)
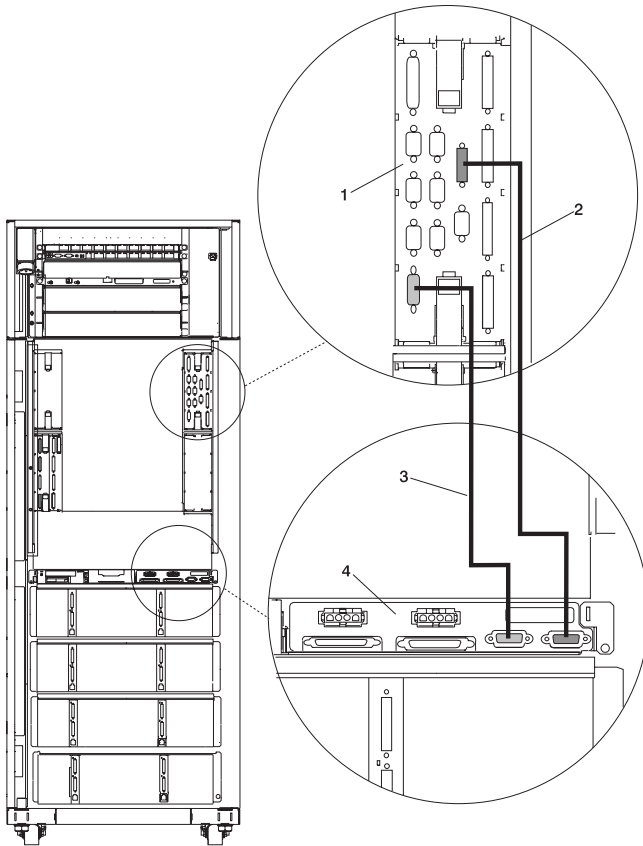
1	Primary I/O Book	**3**	Diskette Drive Data Cable
2	Cable Connecting the Operator Panel to the Media Subsystem	**4**	Media Subsystem

I/O Subsystem Positions, Fully Populated Rack (Rear View without IBF)

C1
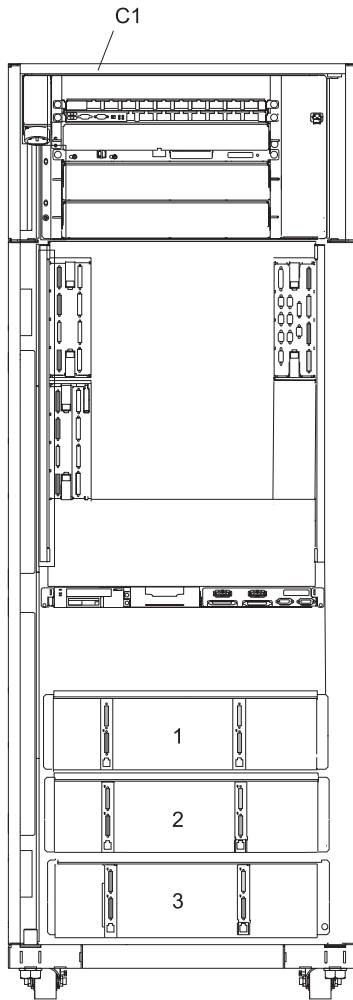
C1	Primary Rack	**2**	Second I/O Subsystem Position
1	First I/O Subsystem Position	**3**	Third I/O Subsystem Position

I/O Subsystem Positions, Fully Populated Rack (Rear View with IBFs)

C1

C2

4B

1

2

3
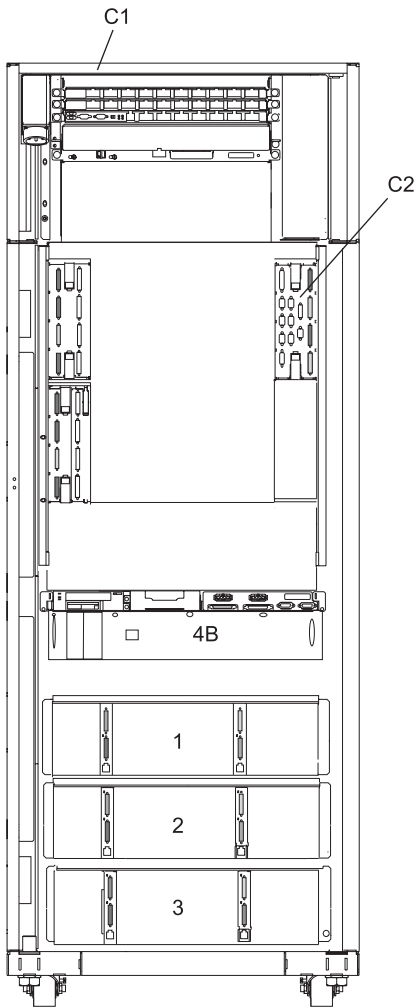
C1	Rack	**2**	Second I/O Subsystem
C2	I/O Book (Book 0)	**3**	Third I/O Subsystem
1	First I/O Subsystem	**4B**	Two IBFs (primary rack), Position 4

RIO and RIO-2 Cabling Rules

Always connect either a one I/O planar loop or a two I/O planar loop to the first six RIO ports of the CEC in the following order:

1. Primary I/O Book Slot 0: RIO 1 A0 & A1, RIO 2 B0 & B1
2. Secondary I/O Book Slot 2: RIO 3 C0 & C1

Note: Use required pairs of RIO ports without omitting any.

The last two RIO ports of the CEC are to connect the last I/O planar of a system with two I/O subsystems connected with one I/O planar loops.

- Secondary I/O Book 2: RIO 4 D0&D1, one planar loop only

    Note: Use required pairs of RIO ports without omitting any.

The following RIO port speeds are available:

- Standard RIO uses a thumbscrew retention physical connector and runs at 500 MB per second.
- Gigabyte RIO, or RIO-2, uses a bayonette retention physical connector and runs at 1 GB per second.

Two I/O planars are available, one for RIO and one for RIO-2, that may be placed in either side of an I/O subsystem. They can be identified by their RIO connector style.

Rules for connecting RIO and RIO-2 CEC ports to I/O subsystem RIO and RIO-2 ports are the following:

- CEC RIO ports must not be connected to I/O subsystem RIO-2 ports, even with the available RIO-2 to RIO cables.
- RIO-2 to RIO cables must only be used to connect CEC RIO-2 ports to I/O subsystem RIO ports.
- RIO to RIO cables must only be used to connect CEC RIO ports to I/O subsystem RIO ports.
- RIO-2 to RIO-2 cables must only be used to connect CEC RIO-2 ports to I/O subsystem RIO-2 ports.

Rules for connecting RIO and RIO-2 I/O planars to the CEC RIO and RIO-2 ports are the following:

- CEC RIO ports must be connected to 2 RIO planars per loop. Up to 3 I/O subsystems can be connected.
- CEC RIO-2 ports can be connected to RIO and RIO-2 I/O planars with appropriate cables in one planar loop or two planar loops in the following order:
    1. Cable any I/O subsystems with RIO I/O planars in both the left and the right positions with 2 I/O planar loop connections. The maximum data rate for each RIO I/O planar is 500 MB per second.
    2. Cable any I/O subsystems with RIO-2 I/O planars in both the left and right positions with 2 I/O planar loop connections. The maximum data rate for each RIO-2 I/O planar is 1 GB per second.
    3. Cable any I/O subsystems with a RIO I/O planar in one side and a RIO-2 I/O planar in the other side with 1 I/O planar loop connection.

        The maximum data rate for the RIO I/O planar is 500 MB per second, and for the RIO-2 I/O planar, the maximum data rate is 2 GB per second. However, in the event of a cable failure, there is no redundant path for the 2 GB per second RIO-2 I/O planar. Restoring the redundant path for the RIO-2 planar reduces the data rate to 1 GB per second. I/O subsystems with a RIO I/O planar in one side and a RIO-2 I/O planar in the other side with 2 I/O planar loop connections are not allowed.

    4. Cable any I/O subsystems with RIO-2 I/O planars in both the left and the right positions with one I/O planar loop connections. The maximum data rate for each RIO-2 I/O planar is 1 GB per second with data path redundancy, or 2 GB per second without data path redundancy.

Note: If all I/O planars are connected to the CEC with one I/O planar loops, the maximum number of I/O subsystems connected to the system is reduced to 2, or four I/O planars (two I/O subsystems).

I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration

Note: The following figure applies to CECs with RIO, or thumbscrew retention, connections.
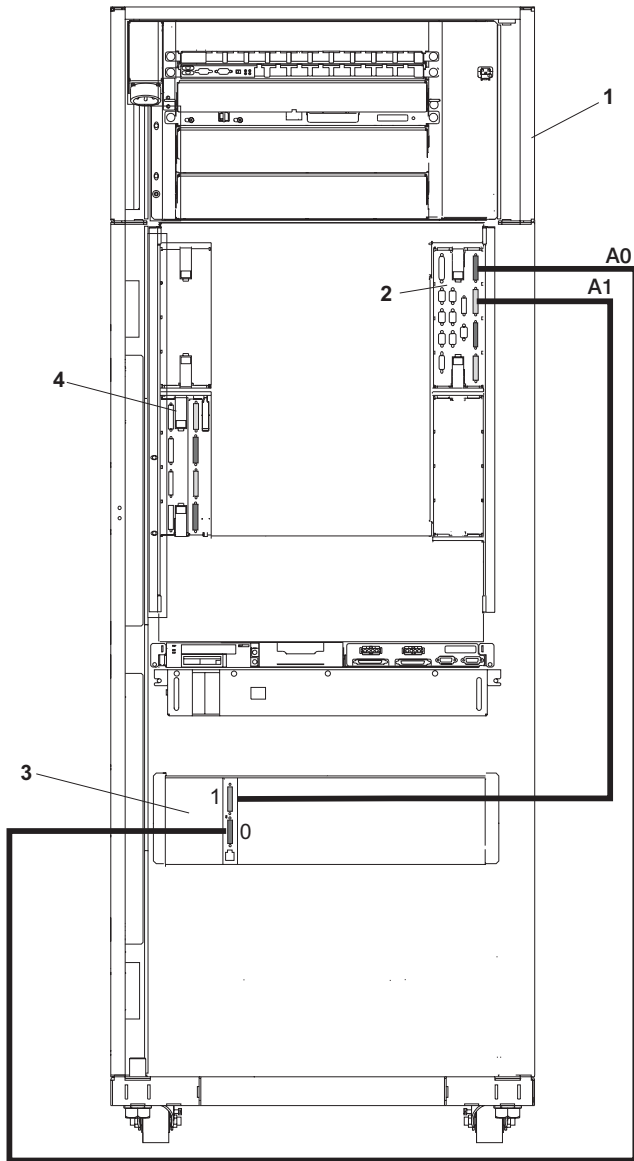
1	Primary Rack	**3**	First I/O Subsystem (Minimum I/O, Single I/O Board Installed)
2	Primary I/O Book	**4**	Secondary I/O Book

I/O Subsystems (1 through 3) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration

Note: The following figure applies to CECs with RIO, or thumbscrew retention, connections.

1	Primary Rack	**4**	Second I/O Subsystem
2	Primary I/O Book	**5**	First I/O Subsystem
3	Third I/O Subsystem	**6**	Secondary I/O Book

I/O Subsystems (1 through 3) RIO-2 Cabling to I/O Books, Two I/O Planar Loop Configuration

Note: The following figure applies to CECs with RIO-2, or bayonette retention, connections.

1	Primary Rack	**4**	Second I/O Subsystem
2	Primary I/O Book	**5**	First I/O Subsystem
3	Third I/O Subsystem	**6**	Secondary I/O Book

I/O Subsystem (One Side of Subsystem 1 with IBF) RIO-2 Cabling to I/O Books, Two I/O Planar Loop Configuration

Note: The following figure applies to CECs with RIO-2, or bayonette retention, connections.

1	Primary Rack	**3**	First I/O Subsystem (Minimum I/O, Single I/O Board Installed)
2	Primary I/O Book	**4**	Secondary I/O Book

I/O Subsystem (One Side of Subsystem 1 with IBF) RIO-2 Cabling to I/O Books, One I/O Planar Loop Configuration

Note: The following figure applies to CECs with RIO-2, or bayonette retention, connections.

1	Primary Rack	**3**	First I/O Subsystem (Minimum I/O, Single I/O Board Installed)
2	Primary I/O Book	**4**	Secondary I/O Book

I/O Subsystems (1 through 2) RIO-2 Cabling to I/O Books, One I/O Planar Loop Configuration

Note: The following figure applies to CECs with RIO-2, or bayonette retention, connections.
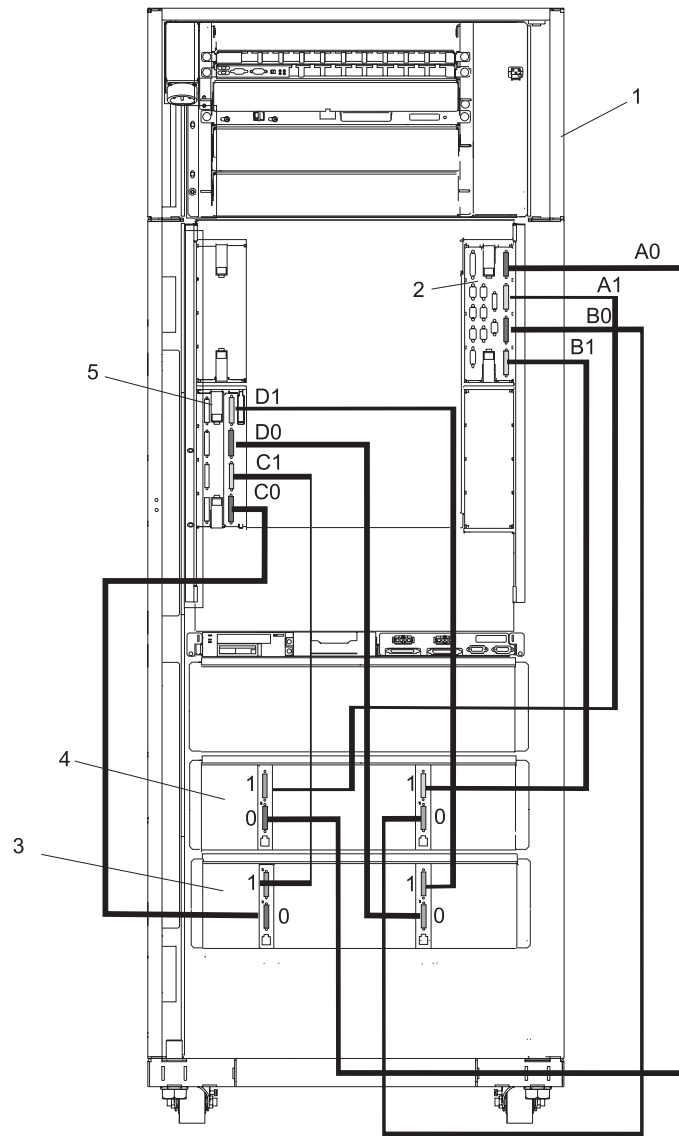
1	Primary Rack	**4**	First I/O Subsystem
2	Primary I/O Book	**5**	Secondary I/O Book
3	Second I/O Subsystem		

Note: The maximum number of I/O subsystems that can be attached in the one planar loop configuration is 2, or four I/O planars. Only eight RIO or RIO-2 ports are available in the CEC. The last two CEC RIO ports must only be used for single I/O planar loop connections.

Power and SCSI Cables to the Media Subsystem
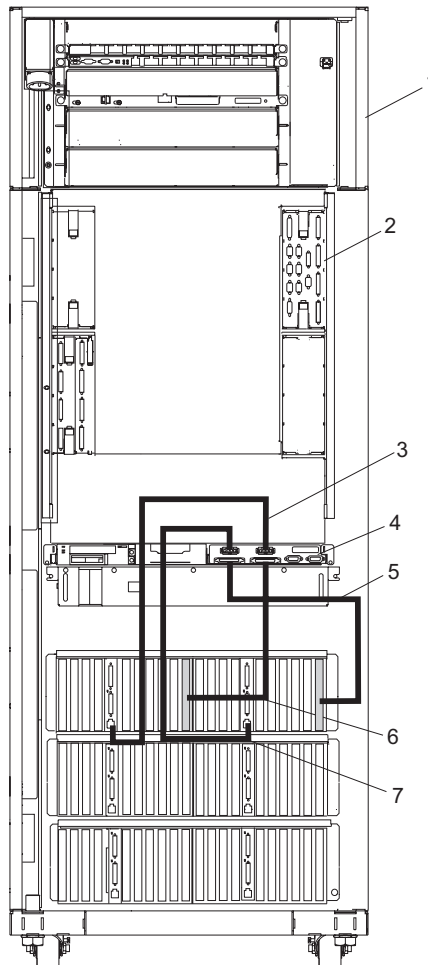
1	Rack	**5***	SCSI Cable for Media Subsystem Rear Drives
2	Primary I/O Book	**6**	SCSI Cable for Media Subsystem Front Drives
3	Power Cable for Media Subsystem Front Drives	**7***	Power Cable for Media Subsystem Rear Drives
4	Rear of Media Subsystem		

Note: *Items 5 and 7 are for applications with a single I/O planar.

Hardware Management Console (HMC) to the Primary I/O Book

To connect your HMC to the 406/70406/70, connect the serial cable into serial port 1 located on the back of the HMC. Connect the other end of the serial cable into the HMC1 connector located on the primary I/O book in the managed system. The following illustration shows the location of the serial ports on the back of the HMC and the HMC connectors located on the processor subsystem.
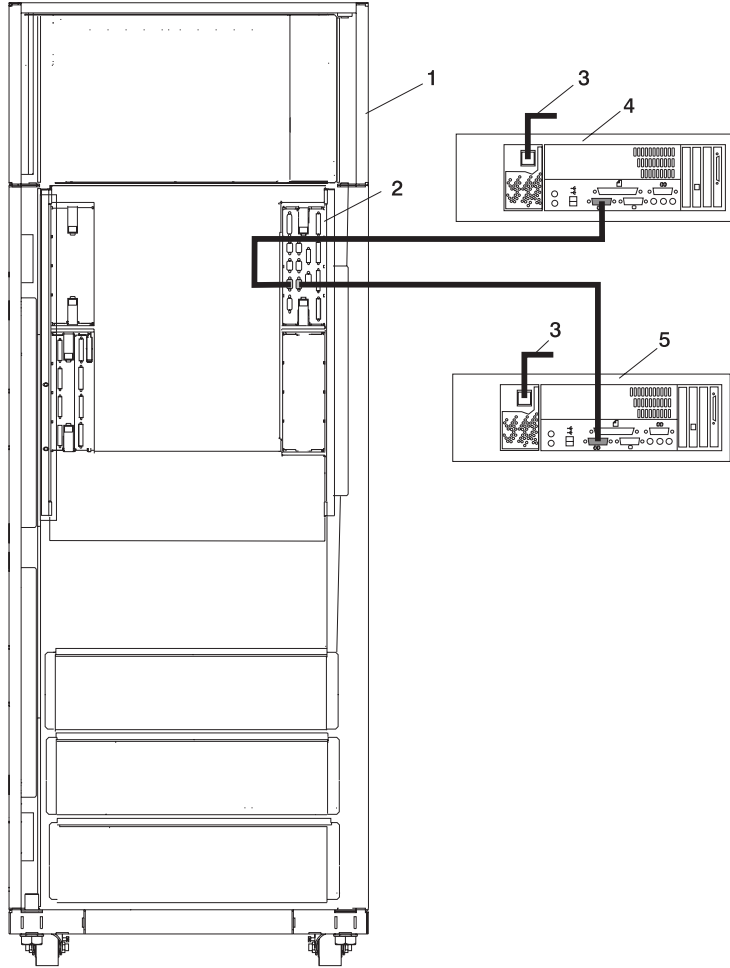
1	Primary Rack	**4**	Primary HMC Connected to HMC #1 in Primary I/O Book (HMC #1 may be labeled HSC #1)
2	Primary I/O Book	**5**	Optional Second HMC Connected to HMC #2 in Primary I/O Book (HMC #2 may be labeled HSC #2)
3	Power Plug to External Power Source (wall plug)		

Optional 8-port or 128 Port Async Adapters

Up to two optional async adapters can be installed in the HMC. The adapters have breakout boxes that allow connection to serial cables that connect to the managed system's HMC 1 serial ports. For information about installing these adapters in the HMC, see the *406/70*, order number SA23-1284.

System Memory

All of the main memory for the 406/70 consists of pluggable memory books in reserved slots with two memory controllers per book. The memory books are available in various sizes. Memory modules are not removable from the memory books. A minimum of 4 GB of memory must be installed for the system to operate.

four slots, located on the front of the processor subsystem, are available for system memory books. These slots are shown in "406/71 Processor Subsystem Front View" on page 17.

Memory to Processor Relationships

The following illustration shows the relationship between the memory riser cards, L3 cache, and the MCM modules:
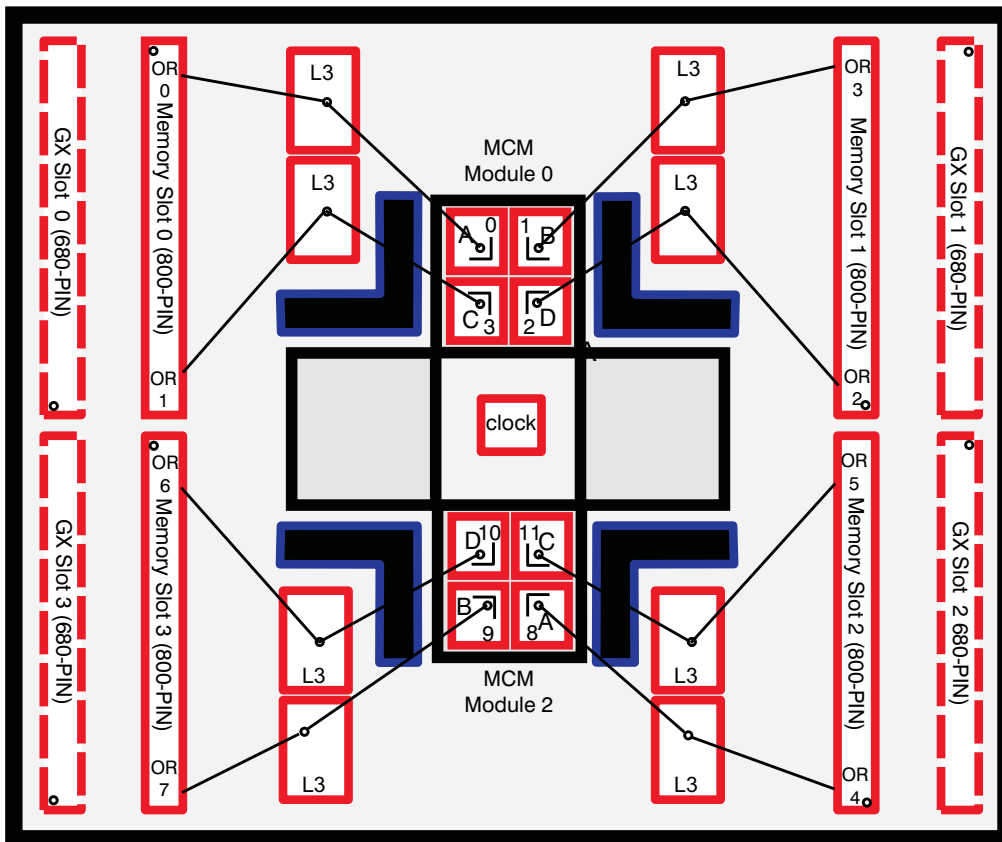
Memory Requirements

Note: The configuration of a system that was ordered with memory Capacity Upgrade on Demand (CUoD) features will appear slightly different than the configuration in this discussion.

When the system is ordered, the installed memory is positioned according to the following guidelines:
- The 406/70 has four memory slots. Four memory slots use inward-facing memory cards. The inward-facing memory slots are used by the first and second processor module positions.
- A 406/70 system with only one processor MCM position populated has access to only two inward-facing memory slots.
- Minimum system memory is 4 GB. Maximum system memory is 128 GB.
- Memory is available in 4 GB, 8 GB, 16 GB, 32 GB, and 64 GB inward-facingincrements.

- The following memory configuration considerations are recommended to ensure the optimum performance is obtained for the system:
  - Memory should be installed in identical pairs.
  - All available memory locations should be populated with memory cards.
  - Memory sizes should be balanced as closely as possible across all populated MCM locations.
- The number of active memory positions on a system is related to the number of populated MCM locations. One memory position is activated for each MCM installed.
  - The first MCM installed activates the first and second inward-facing memory positions.
  - The second MCM installed activates the third and fourth inward-facing memory positions.
- It is recommended that all systems have access to a 4-mm or 8-mm tape drive for submission of system dump information, if required. This function can be accomplished through locally attached or network-attached devices as appropriate.

I/O Subsystem Features

I/O subsystems have two redundant power supplies. One of these power supplies is capable of providing the necessary voltages and currents, independent of the other power supply. The left and right power-supply output voltages are connected and monitored by the power distribution board contained in the I/O subsystem.

The left and right power supplies are hot-pluggable and may be changed one at a time while the system is operational. Each power supply provides 5V dc, 3.3V dc, 12V dc, and 5V dc standby.

I/O to Processor Relationships

The following illustration shows the relationship between the I/O books, L3 cache, and the MCM modules:
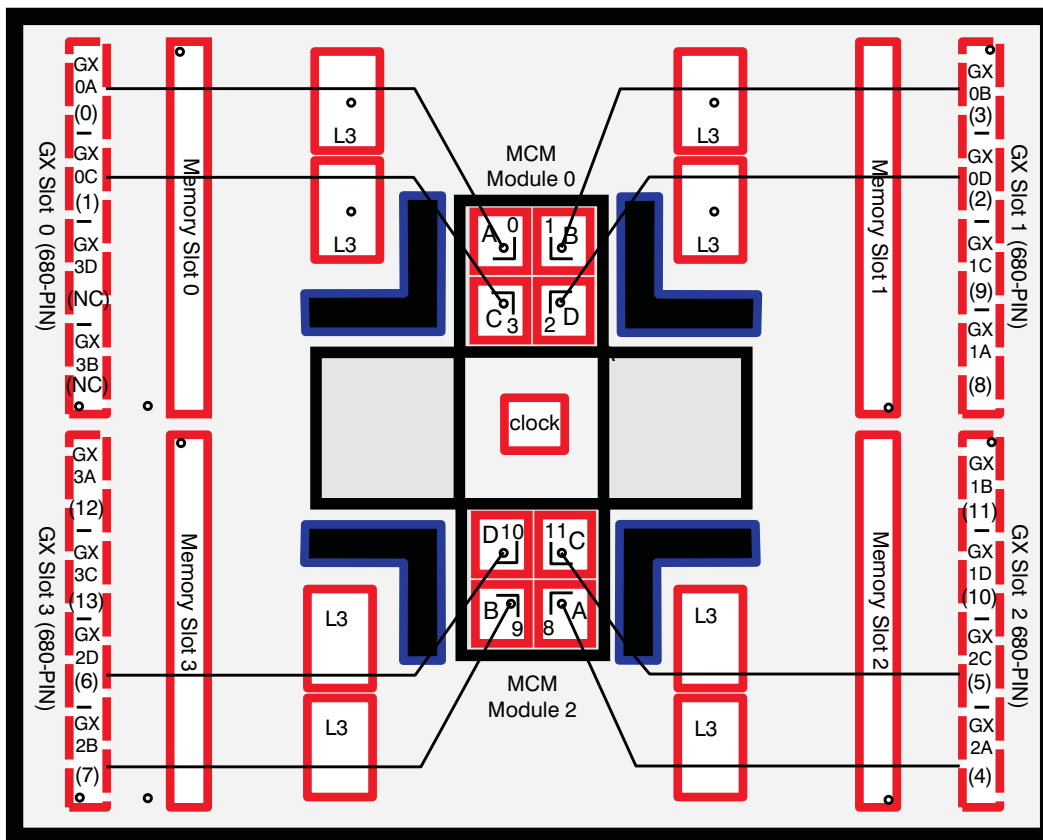
I/O Subsystem Power Supply (DCA) LED Status

Use the following table to determine the condition of the I/O subsystem power supply (DCA) based on the status of the power supply LEDs.

Status of LED	Operator Panel LED	Right Power Supply LED	Left Power Supply LED
Off	No power connected	No power connected or system power connected, not turned on, power supply detects no faults	No power connected or system power connected, not turned on, power supply detects no faults
On, fast blinking green, on for one second, off for one second	System power connected, power on initiated	System power connected, not turned on, power supply detected fault	System power connected, not turned on, power supply detected fault

Status of LED	Operator Panel LED	Right Power Supply LED	Left Power Supply LED
On, slow blinking green, on for two seconds, off for two seconds	System power connected, not turned on	System power connected, not turned on, power supply detected system power control network fault	System power connected, not turned on, power supply detected system power control network fault
On, steady green	System power connected and turned on	System power connected and turned on	System power connected and turned on

Logical and Physical Locations

The 406/70 system uses physical location codes in conjunction with AIX location codes to provide mapping of the failing field replaceable units (FRUs). The location codes are produced by the system's firmware and the operating system. There are no Linux-specific location codes, but physical location codes may appear in the Linux error logs.

Physical Location Codes

Physical location codes provide a mapping of logical functions in a platform (or expansion sites for logical functions, such as connectors or ports) to their specific locations within the physical structure of the platform.

Location Code Format

The format for the location code is a string of alphanumeric characters separated by a dash (-), slash (/), pound sign (#) or period (.) character. The base location is all of the information preceding the slash (/) or pound sign (#). The base location identifies a device that is connected to or plugged into the parent. Extended location information follows the slash (/). Extended location information identifies a device that is part of the parent, a connector, or a cable. Cable information follows the pound sign (#). Cable information identifies a cable that is connected to parent. The following are examples:

- P1-C1 identifies a processor card C1 (MCM) plugged into planar (backplane) P1.
- P1-M1 identifies a memory card (book) M1 plugged into planar (backplane) P1.
- P1-H2/S1 identifies serial port 1 controller on planar (backplane) P1, the connector for serial port 1, the cable attached to serial port 1 would be represented by a # sign after the S1.
- P1-I2/E3 identifies a Ethernet controller 3 on the card in slot 2 (I2) on planar (backplane) P1, the connector for Ethernet controller 3, or the cable attached to Ethernet controller 3.
- P1-I2#E3 identifies the cable attached to Ethernet controller 3 on the card in slot 2 (I2) on planar (backplane) P1.

The period (.) identifies sublocations (SCSI addresses, cables). The following are examples:

- P1-C1.1 identifies processor 1 on processor card (MCM) plugged into planar (backplane) P1.
- P2-Z1-A3.1 identifies a SCSI device with SCSI address of LUN 1 at SCSI ID 3 attached to SCSI bus 1 from planar (backplane) 2.
- P1-I2#E3.2 identifies the second in a series of cables attached to Ethernet controller 3 on the card in slot 2 (I2) on planar (backplane) P1.

Depending on the AIX and firmware levels, AIX diagnostics may include the extended location information when identifying a planar (backplane) or card. The extended location information or cable information is always included when identifying a cable or connector. Location codes with extended location information that are displayed without a description identifying the devices always identify the cable attached to the port.

Multiple FRU Callout Instructions

If an eight-digit error code appears in the operator panel display or in Chapter 5, "Error Code to FRU Index", on page 341, a location code for a failing part may also be specified. If the location code includes a blank space followed by a lowercase x followed by a number, this is an error code with multiple FRU callouts. This error can typically happen with memory books or processors, and may involve mixed types of parts. In this case, check the system's configuration for FRU part numbers to determine the appropriate set of FRUs.

You can determine the FRU part numbers of the electronic assemblies in the entire system by using the service processor menus. From the General User menu, select **Read VPD Image from Last System Boot**, then enter 90 to display detailed Vital Product Data (VPD).

You can determine the FRU part numbers of the electronic assemblies in a partition by using the **lscfg -vp l pg** command on the AIX command line to display the detailed VPD of all assemblies. Notice that the FRU part number information for processors and memory books may be at the bottom of the command output.

FRU Identify LEDs

This system is configured with an arrangement of LEDs that help identify various components of the system. These include, but are not limited to:

- Rack identify LED
- Processor subsystem drawer identify LED
- I/O drawer identify LED
- RIO port identify LED
- FRU identify LED
  - Power subsystem FRUs
  - Processor subsystem FRUs
  - I/O subsystem FRUs
- I/O adapter identify LED
- DASD identify LED

The identify LEDs are arranged hierarchically with the FRU identify LED at the bottom of the hierarchy, followed by the corresponding processor subsystem or I/O drawer identify LED, and the corresponding rack-identify LED to locate the failing FRU more easily.

Any identify LED in the system may be flashed (when the processor subsystem is in the failed state and power is on) by using the service processor LED Control Menu contained in the System Information Menu of the Privileged User Menus. For information about using the LED Control Menu, see page 699.

Any identify LED in the system can also be flashed by using the Identify and Attention Indicators task in diagnostics. The procedure to use the Identify and Attention Indicators task in diagnostics is outlined in *Diagnostic Information for Multiple Bus Systems*.

If the service processor menus and AIX diagnostics are not available, the FRU identify LEDs can be flashed by one of the following procedures:

- If the system is configured as a full partition, the system may be booted to the open firmware prompt and the command **FRU-LED-MENU** entered. A menu displays that allows you to enable the desired FRU identify LED. See "System Power Control Menu" on page 690 for instructions on setting up the boot mode to enable the boot to the open firmware prompt.
- If the system is logically partitioned, the HMC must be attached. You can use the HMC to enable any FRU identify LED to be flashed. See the *Hardware Management Console Operations Guide* for instructions on activating and deactivating a FRU identify LED.

AIX Location Codes

Note: AIX location codes are not available if Linux is the operating system.

The basic formats of the AIX location codes are as follows:
- For non-SCSI devices/drives:
  AB-CD-EF-GH
- For SCSI devices/drives:
  AB-CD-EF-G,H

Non-SCSI Devices

For planars (backplanes), cards, and non-SCSI devices, the location code is defined as follows:

```
AB-CD-EF-GH
 │  │  │  │
 │  │  │  Device/FRU/Port ID
 │  │  Connector ID
 │  devfunc Number, Adapter Number or Physical Location
 Bus Type or PCI Parent Bus
```
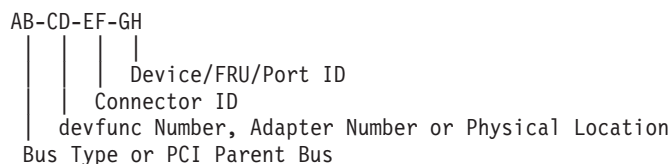
- The AB value identifies a bus type or PCI parent bus as assigned by the firmware.
- The CD value identifies adapter number, adapter's *devfunc* number, or physical location. The devfunc number is defined as the PCI device number times 8, plus the function number.
- The EF value identifies a connector.
- The GH value identifies a port, address, device, or FRU.

Adapters and cards are identified only with AB-CD.

The possible values for CD depend on the adapter/card. For pluggable PCI adapters/cards, CD is the device's devfunc number (PCI device number times 8, plus the function number). The C and D are characters in the range of 0-9, and A-F (hex numbers). The location codes therefore uniquely identify multiple adapters on individual PCI cards.

EF is the connector ID, used to identify the adapter's connector to which a resource is attached.

GH is used to identify a port, device, or FRU. For example:
- For asynchronous devices, GH defines the port on the fanout box. The values are 00 to 15.
- For a diskette drive, H identifies either diskette drive 1 or 2. G is always 0.
- For all other devices, GH is equal to 00.

For integrated adapter, EF-GH is the same as the definition for a pluggable adapter. For example, the location code for a diskette drive is 01-D1-00-00. A second diskette drive is 01-D1-00-01.

SCSI Devices

For SCSI devices, the location code is defined as follows:

```
AB-CD-EF-G,H
 │  │  │  │ │
 │  │  │  │ │ Logical Unit address of the SCSI Device
 │  │  │  │ Control Unit Address of the SCSI Device
 │  │  │ Connector ID
 │  │ devfunc Number, Adapter Number or Physical Location
 │ Bus Type or PCI Parent Bus
```
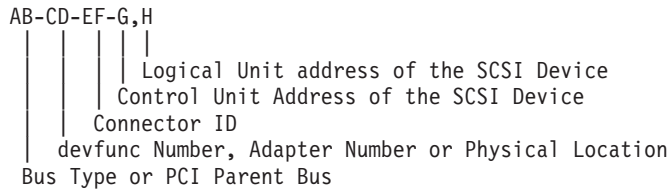
Where:

- AB-CD-EF are the same as non-SCSI devices.
- G defines the control unit address of the device. Values of 0 to 15 are valid.
- H defines the logical unit address of the device. Values of 0 to 255 are valid.

A bus location code is also generated as '00-XXXXXXXX', where XXXXXXXX is equivalent to the node's unit address.

Examples of physical location codes and AIX location codes are:

    PCI adapter in first I/O subsystem, slot 1 (primary rack):
- Physical location code U1.9-P1-I1
- AIX location code 2V-08

    PCI adapter in fifth I/O subsystem, slot 1 (secondary rack):
- Location Code U2.1-P1-I1
- AIX location Code 8V-08

AIX and Physical Location Code Reference Tables

Attention: AIX location codes are not available when the operating system is Linux.

The following illustrations show the location codes that are used to identify the major functional units in the 406/70 rack. The following figure shows the primary rack locations.

FRONT	REAR
U1.35-P1-X1 Unused	U1.35-P2-X1 Unused
U1.35-P1-X2 Unused	U1.35-P2-X2 Unused
U1.35-P1-X3	U1.35-P2-X3
U1.35-P1-X4	U1.35-P2-X4
U1.35-P1-V1	U1.35-P2-V1
U1.35-P1-F1	U1.35-P2-F1

FRONT panel codes:
- U1.18-P1-M2
- U1.18-P1-M6
- U1.18-X3 / U1.18-F3
- U1.18-X4 / U1.18-F4
- U1.18-P1-M3
- U1.18-P1-M7
- U1.18-X1 / U1.18-F1
- U1.18-X2 / U1.18-F2

REAR panel codes:
- Unused
- U1.18-P1-H3
- U1.18-P1-V1
- U1.18-P1-V2
- U1.18-P1-V3
- U1.18-P1-V4
- U1.18-P1-V5 Unused
- U1.18-P1-V6 Unused
- U1.18-P1-V7 Unused
- Unused
- U1.18-P1-H2

FRONT	REAR
U1.17	U1.17
U1.13-P1-V1	U1.13-P2-V3
U1.9	U1.9
U1.5	U1.5
U1.1	U1.1

FRONT

REAR

The following illustration shows the location codes that are used to identify the MCM modules and L3 modules (located behind fans 3--U1.18-P1-F3 and 4--U1.18-P1-F4).
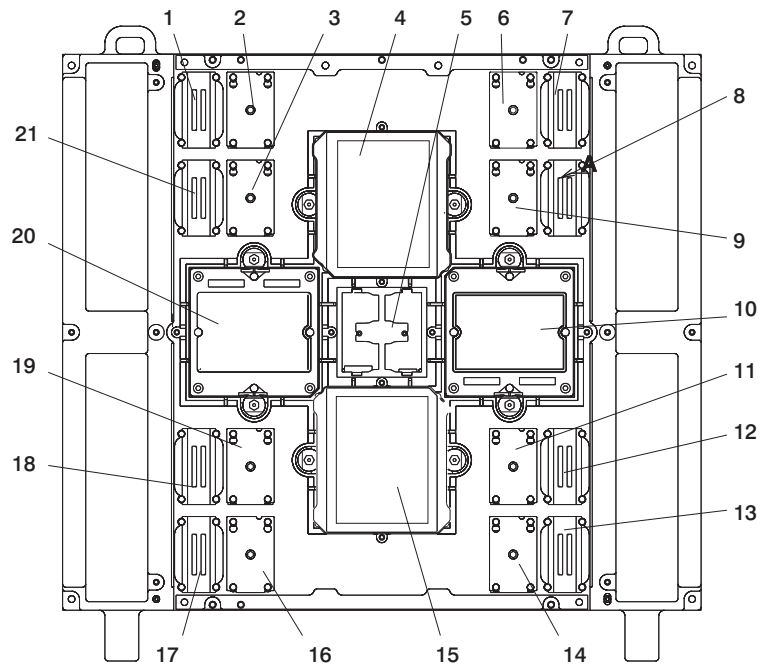
1	Reserved	**12**	Reserved
2	L3, Location: U1.18-P1-C6	**13**	Reserved
3	L3, Location: U1.18-P1-C10	**14**	L3, Location: U1.18-P1-C19
4	MCM 0, Location: U1.18-P1-C1	**15**	MCM 2, Location: U1.18-P1-C4
5	Clock Card, Location: U1.18-P1-X5	**16**	L3, Location: U1.18-P1-C18
6	L3, Location: U1.18-P1-C7	**17**	Reserved
7	Reserved	**18**	Reserved
8	Reserved	**19**	L3, Location: U1.18-P1-C14
9	L3, Location: U1.18-P1-C11	**20**	Reserved
10	Reserved	**21**	Reserved
11	L3, Location: U1.18-P1-C15		

The following tables contain location codes that are used to identify functional units in the 406/70 systems. Each table shows the locations for a physical part of the system.

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
System Rack	(MT/M Serial#) U1			
Bulk Power Subsystem 1 Locations				
Bulk Power Enclosure A (front)	U1.35			
BPE Backplane A	U1.35-P1			
AC to BPE (A) Line Cord Connector	U1.35-P1/Q1			
AC to BPE (A) Line Cord	U1.35-P1/Q1#			
Bulk Power Reg 1	U1.35-P1-V1			
BPR 1 Connector	U1.35-P1-V1/Q1			
BPR 1 Cable to IBF 1A	U1.35-P1-V1/Q1#			
Bulk Power Distribution 3 (Unused)	**U1.35-P1-X1**			
SPARE	U1.35-P1-X1/Q1			
SPARE Cable	U1.35-P1-X1/Q1#			
SPARE	U1.35-P1-X1/Q2			
SPARE Cable	U1.35-P1-X1/Q2#			
SPARE	U1.35-P1-X1/Q3			
SPARE Cable	U1.35-P1-X1/Q3#			
SPARE	U1.35-P1-X1/Q4			
SPARE Cable	U1.35-P1-X1/Q4#			
SPARE	U1.35-P1-X1/Q5			
SPARE Cable	U1.35-P1-X1/Q5#			
SPARE	U1.35-P1-X1/Q6			
SPARE Cable	U1.35-P1-X1/Q6#			
SPARE	U1.35-P1-X1/Q7			
SPARE Cable	U1.35-P1-X1/Q7#			
SPARE	U1.35-P1-X1/Q8			
SPARE Cable	U1.35-P1-X1/Q8#			
SPARE	U1.35-P1-X1/Q9			
SPARE Cable	U1.35-P1-X1/Q9#			
SPARE	U1.35-P1-X1/Q10			
SPARE Cable	U1.35-P1-X1/Q10#			
Bulk Power Reg 2 (BPR)	U1.35-P1-V2			
BPR 2 (BPR) Connector	U1.35-P1-V2/Q1			
BPR 2 Cable to IBF 2A	U1.35-P1-V2/Q1#			
Bulk Power Distribution 1	**U1.35-P1-X3**			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem -1A Connector 0 I/O Subsystem 1 (DCA 1)	U1.35-P1-X3/Q1			
I/O Subsystem -1A Cable	U1.35-P1-X3/Q1#			
I/O Subsystem -1B Connector 1 I/O Subsystem 1 (DCA 2)	U1.35-P1-X3/Q2			
I/O Subsystem -1B Cable	U1.35-P1-X3/Q2#			
I/O Subsystem -2A Connector 2 I/O Subsystem 2 (DCA 1)	U1.35-P1-X3/Q3			
I/O Subsystem -2A Cable	U1.35-P1-X3/Q3#			
I/O Subsystem -2B Connector 3 I/O Subsystem 2 (DCA 2)	U1.35-P1-X3/Q4			
I/O Subsystem -2B Cable	U1.35-P1-X3/Q4#			
I/O Subsystem -3A Connector 4 I/O Subsystem 3 (DCA 1)	U1.35-P1-X3/Q5			
I/O Subsystem -3A Cable	U1.35-P1-X3/Q5#			
I/O Subsystem -3B Connector 5 I/O Subsystem 3 (DCA 2)	U1.35-P1-X3/Q6			
I/O Subsystem -3B Cable	U1.35-P1-X3/Q6#			
I/O Subsystem -4A Connector 6 I/O Subsystem 4 (DCA 1)	U1.35-P1-X3/Q7#			
I/O Subsystem -4A Cable	U1.35-P1-X3/Q7#			
I/O Subsystem -4B Connector 7 I/O Subsystem 4 (DCA 2)	U1.35-P1-X3/Q8			
I/O Subsystem -4B Cable	U1.35-P1-X3/Q8#			
DCA-4 Connector	U1.35-P1-X3/Q9			
DCA-4 Cable	U1.35-P1-X3/Q9#			
DCA-5 Connector	U1.35-P1-X3/Q10			
DCA-5 Cable	U1.35-P1-X3/Q10#			
Bulk Power Distribution 2	**U1.35-P1-X2**			
I/O Subsystem -5A Connector 0 I/O Subsystem 5 (DCA 1)	U1.35-P1-X2/Q1			
I/O Subsystem -5A Cable	U1.35-P1-X2/Q1#			
I/O Subsystem -5B Connector 1 I/O Subsystem 5 (DCA 2)	U1.35-P1-X2/Q2			
I/O Subsystem -5B Cable	U1.35-P1-X2/Q2#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem -6A Connector 2 I/O Subsystem 6 (DCA 1)	U1.35-P1-X2/Q3			
I/O Subsystem -6A Cable	U1.35-P1-X2/Q3#			
I/O Subsystem -6B Connector 3 I/O Subsystem 6 (DCA 2)	U1.35-P1-X2/Q4			
I/O Subsystem -6B Cable	U1.35-P1-X2/Q4#			
I/O Subsystem -7A Connector 4 I/O Subsystem 7 (DCA 1)	U1.35-P1-X2/Q5			
I/O Subsystem -7A Cable	U1.35-P1-X2/Q5#			
I/O Subsystem -7B Connector 5 I/O Subsystem 7 (DCA 2)	U1.35-P1-X2/Q6			
I/O Subsystem -7B Cable	U1.35-P1-X2/Q6#			
SPARE (Future Subsystem 8)	U1.35-P1-X2/Q7			
SPARE cable	U1.35-P1-X2/Q7#			
SPARE 5 (Future Subsystem 8)	U1.35-P1-X2/Q8			
SPARE cable	U1.35-P1-X2/Q8#			
SPARE connector	U1.35-P1-X2/Q9			
SPARE cable	U1.35-P1-X2/Q9#			
DCA-6 Connector	U1.35-P1-X2/Q10			
DCA-6 Cable	U1.35-P1-X2/Q10#			
Bulk Power Regulator 3	U1.35-P1-V3			
BPR 3 Connector	U1.35-P1-V3/Q1			
BPR 3 Cable to IBF 3A	U1.35-P1-V3/Q1#			
Bulk Power Fan (BPF)	U1.35-P1-F1			
BPF TO BPC Connector	U1.35-P1-F1/Q1			
BPF TO BPC Cable	U1.35-P1-F1/Q1#			
Bulk Power Controller A	**U1.35-P1-X4**			
BPC A - MDA-1 Connector	U1.35-P1-X4/Q1			
BPC A - MDA-1 Cable	U1.35-P1-X4/Q1#			
BPC A - MDA-2 Connector	U1.35-P1-X4/Q2			
BPC A - MDA-2 Cable	U1.35-P1-X4/Q2#			
BPC A - MDA-3 Connector	U1.35-P1-X4/Q3			
BPC A - MDA-3 Cable	U1.35-P1-X4/Q3#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
BPC A - MDA-4 Connector	U1.35-P1-X4/Q4			
BPC A - MDA-4 Cable	U1.35-P1-X4/Q4#			
BPC A - DCA-1 Connector	U1.35-P1-X4/Q5			
BPC A - DCA-1 Cable	U1.35-P1-X4/Q5#			
BPC A - DCA-2 Connector	U1.35-P1-X4/Q6			
BPC A - DCA-2 Cable	U1.35-P1-X4/Q6#			
BPC A - DCA-3 Connector	U1.35-P1-X4/Q7			
BPC A - DCA-3 Cable	U1.35-P1-X4/Q7#			
BPC A TO BPC B Connector	U1.35-P1-X4/Q8			
BPC A TO BPC B Cable	U1.35-P1-X4/Q8#			
BPC A To Primary I/O Book Connector U1.18-P1-H2/Q8	U1.35-P1-X4/Q10			
BPC A ″Y″ Cable To Primary I/O Book Connector U1.18-P1-H2/Q8	U1.35-P1-X4/Q10#			
BPC A TO BPF A Connector	U1.35-P1-X4/Q11			
BPC A TO BPF A Cable	U1.35-P1-X4/Q11#			
UEPO Switch (attached to frame)	U1-V1			
UEPO Connector J00	U1-V1/Q1			
UEPO Cable to BPC A	U1-V1/Q1#			
UEPO Connector J01	U1-V1/Q2			
UEPO Cable to BPC B	U1-V1/Q2#			
Bulk Power Enclosure B (back)	**U1.35**			
BPE Backplane B	U1.35-P2			
AC TO BPE (A) Line Cord Connector	U1.35-P2/Q1			
AC TO BPE (A) Line Cord	U1.35-P2/Q1#			
Bulk Power Regulator (BPR) 1	U1.35-P2-V1			
BPR 1 Connector	U1.35-P2-V1/Q1			
BPR 1 cable to IBF 1A	U1.35-P2-V1/Q1#			
Bulk Power Distribution 2	**U1.35-P2-X2**			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem -5A Connector 0 I/O Subsystem 5 (DCA 1)	U1.35-P2-X2/Q1			
I/O Subsystem -5A Cable	U1.35-P2-X2/Q1#			
I/O Subsystem -5B Connector 1 I/O Subsystem 5 (DCA 2)	U1.35-P2-X2/Q2			
I/O Subsystem -5B Cable	U1.35-P2-X2/Q2#			
I/O Subsystem -6A Connector 2 I/O Subsystem 6 (DCA 1)	U1.35-P2-X2/Q3			
I/O Subsystem -6A Cable	U1.35-P2-X2/Q3#			
I/O Subsystem -6B Connector 3 I/O Subsystem 6 (DCA 2)	U1.35-P2-X2/Q4			
I/O Subsystem -6B Cable	U1.35-P2-X2/Q4#			
I/O Subsystem -7A Connector 4 I/O Subsystem 7 (DCA 1)	U1.35-P2-X2/Q5			
I/O Subsystem -7A cable	U1.35-P2-X2/Q5#			
I/O Subsystem -7B Connector 5 I/O Subsystem 7 (DCA 2)	U1.35-P2-X2/Q6			
I/O Subsystem -7B cable	U1.35-P2-X2/Q6#			
SPARE (Future Drawer 8)	U1.35-P2-X2/Q7			
SPARE cable	U1.35-P2-X2/Q7#			
SPARE 5 (Future Drawer 8)	U1.35-P2-X2/Q8			
SPARE cable	U1.35-P2-X2/Q8#			
SPARE	U1.35-P2-X2/Q9			
SPARE cable	U1.35-P2-X2/Q9#			
DCA-6 Connector / F UTURE USE	U1.35-P2-X2/Q10			
DCA-6 Cable / FUTURE USE	U1.35-P2-X2/Q10#			
Bulk Power Regulator 2	U1.35-P2-V2			
BPR 2 Connector	U1.35-P2-V2/Q1			
BPR 2 Cable to IBF 2A	U1.35-P2-V2/Q1#			
Bulk Power Distribution 1	**U1.35-P2-X3**			
I/O Subsystem -1A Connector 0 I/O Subsystem 1 (DCA 1)	U1.35-P2-X3/Q1			
I/O Subsystem -1A Cable	U1.35-P2-X3/Q1#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem -1B Connector 1 I/O Subsystem 1 (DCA 2)	U1.35-P2-X3/Q2			
I/O Subsystem -1B Cable	U1.35-P2-X3/Q2#			
I/O Subsystem -2A Connector 2 I/O Subsystem 2 (DCA 1)	U1.35-P2-X3/Q3			
I/O Subsystem -2A Cable	U1.35-P2-X3/Q3#			
I/O Subsystem -2B Connector 3 I/O Subsystem 2 (DCA 2)	U1.35-P2-X3/Q4			
I/O Subsystem -2B Cable	U1.35-P2-X3/Q4#			
I/O Subsystem -3A Connector 4 I/O Subsystem 3 (DCA 1)	U1.35-P2-X3/Q5			
I/O Subsystem -3A Cable	U1.35-P2-X3/Q5#			
I/O Subsystem -3B Connector 5 I/O Subsystem 3 (DCA 2)	U1.35-P2-X3/Q6			
I/O Subsystem -3B Cable	U1.35-P2-X3/Q6#			
I/O Subsystem -4A Connector 6 I/O Subsystem 4 (DCA 1)	U1.35-P2-X3/Q7			
I/O Subsystem -4A Cable	U1.35-P2-X3/Q7#			
I/O Subsystem -4B Connector 7 I/O Subsystem 4 (DCA 2)	U1.35-P2-X3/Q8			
I/O Subsystem -4B Cable	U1.35-P2-X3/Q8#			
DCA-4 Connector	U1.35-P2-X3/Q9			
DCA-4 Cable	U1.35-P2-X3/Q9#			
DCA-5 Connector	U1.35-P2-X3/Q10			
DCA-5 Cable	U1.35-P2-X3/Q10#			
Bulk Power Regulator 3	U1.35-P2-V3			
BPR 2 Connector	U1.35-P2-V3/Q1			
BPR 2 Cable to IBF 3A	U1.35-P2-V3/Q1#			
Bulk Power Distribution (Unused)	**U1.35-P2-X1**			
SPARE	U1.35-P2-X1/Q1			
SPARE cable	U1.35-P2-X1/Q1#			
SPARE	U1.35-P2-X1/Q2			
SPARE cable	U1.35-P2-X1/Q2#			
SPARE	U1.35-P2-X1/Q3			
SPARE cable	U1.35-P2-X1/Q3#			
SPARE	U1.35-P2-X1/Q4			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
SPARE cable	U1.35-P2-X1/Q4#			
SPARE	U1.35-P2-X1/Q5			
SPARE cable	U1.35-P2-X1/Q5#			
SPARE	U1.35-P2-X1/Q6			
SPARE cable	U1.35-P2-X1/Q6#			
SPARE	U1.35-P2-X1/Q7			
SPARE cable	U1.35-P2-X1/Q7#			
SPARE	U1.35-P2-X1/Q8			
SPARE cable	U1.35-P2-X1/Q8#			
SPARE	U1.35-P2-X1/Q9			
SPARE cable	U1.35-P2-X1/Q9#			
SPARE	U1.35-P2-X1/Q10			
SPARE cable	U1.35-P2-X1/Q10#			
Bulk Power Fan	U1.35-P2-F1			
BPF TO BPC Connector	U1.35-P2-F1/Q1			
BPF TO BPC Cable	U1.35-P2-F1/Q1#			
Bulk Power Controller B	**U1.35-P2-X4**			
BPC B - MDA-1 Connector	U1.35-P2-X4/Q1			
BPC B - MDA-1 Cable	U1.35-P2-X4/Q1#			
BPC B - MDA-2 Connector	U1.35-P2-X4/Q2			
BPC B - MDA-2 Cable	U1.35-P2-X4/Q2#			
BPC B - MDA-3 Connector	U1.35-P2-X4/Q3			
BPC B - MDA-3 Cable	U1.35-P2-X4/Q3#			
BPC B - MDA-4 Connector	U1.35-P2-X4/Q4			
BPC B - MDA-4 Cable	U1.35-P2-X4/Q4#			
BPC B - DCA-1 Connector	U1.35-P2-X4/Q5			
BPC B - DCA-1 Cable	U1.35-P2-X4/Q5#			
BPC B - DCA-2 Connector	U1.35-P2-X4/Q6			
BPC B - DCA-2 Cable	U1.35-P2-X4/Q6#			
BPC B - DCA-3 Connector	U1.35-P2-X4/Q7			
BPC B - DCA-3 Cable	U1.35-P2-X4/Q7#			
BPC TO BPC Connector	U1.35-P2-X4/Q8			
BPC TO BPC Cable	U1.35-P2-X4/Q8#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
BPC TO EPOC Connector	U1.35-P2-X4/Q9			
BPC TO EPOC Cable	U1.35-P2-X4/Q9#			
BPC TO Primary I/O Book Connector U1.18-P1-H2/Q8	U1.35-P2-X4/Q10			
BPC B ″Y″ Cable To Primary I/O Book Connector U1.18-P1-H2/Q8	U1.35-P2-X4/Q10#			
BPC TO BPF Connector	U1.35-P2-X4/Q11			
BPC TO BPF Cable	U1.35-P2-X4/Q11#			
UEPO TO BPC A Connector	U1-V1/Q1			
UEPO TO BPC A Cable	U1-V1/Q1#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Processor Subsystem Locations				
Processor Subsystem	(MT/M Serial #) U1.18			
System Board (backplane)	U1.18-P1			
Memory Book - Slot 0	U1.18-P1-M2	00-00		
Memory Book - Slot 1	U1.18-P1-M3	00-00		
Memory Book - Slot 3	U1.18-P1-M6	00-00		
Memory Book - Slot 2	U1.18-P1-M7	00-00		
Memory Book - Slot 7	U1.18-P1-M1	00-00		
Memory Book - Slot 4	U1.18-P1-M4	00-00		
Memory Book - Slot 6	U1.18-P1-M5	00-00		
Memory Book - Slot 5	U1.18-P1-M8	00-00		
Primary I/O book - Slot 0	U1.18-P1-H2			
System VPD Module (Backup)	U1.18-P1-H2-N1			
Diskette Drive Controller	U1.18-P1-H2/D1	01-D1		
Serial Port 1 Connector	U1.18-P1-H2/S1	01-S1		
Serial Port 1 Cable	U1.18-P1-H2/S1#			
Serial Port 2 Connector	U1.18-P1-H2/S2	01-S2		
Serial Port 2 Cable	U1.18-P1-H2/S2#			
HMC Serial Port 1 Connector	U1.18-P1-H2/S3	01-S3		
HMC Serial Port 1 Cable	U1.18-P1-H2/S3#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
HMC Serial Port 2 Connector	U1.18-P1-H2/S4	01-S4		
HMC Serial Port 2 Cable	U1.18-P1-H2/S4#			
Debug Port Only	U1.18-P1-H2/R1	01-R1		
Operator Panel Connector	U1.18-P1-H2/Q7			
Diskette Drive Connector	U1.18-P1-H2/Q10			
Diskette Drive Cable	U1.18-P1-H2/Q10#			
BPC A&B Connector	U1.18-P1-H2/Q8			
BPC A Connector	U1.18-P1-H2/Q8			
BPC A Cable	U1.18-P1-H2/Q8#			
BPC B Connector	U1.18-P1-H2/Q9			
BPC B Cable	U1.18-P1-H2/Q9#			
SPCN Port 0 Connector	U1.18-P1-H2/Q5			
SPCN Port 0 Cable	U1.18-P1-H2/Q5#			
SPCN Port 1 Connector	U1.18-P1-H2/Q6			
SPCN Port 1 Cable	U1.18-P1-H2/Q6#			
JTAG	U1.18-P1-H2			
NVRAM	U1.18-P1-H2			
System Firmware	U1.18-P1-H2/Y1			
Primary I/O book-0 Port 0 Connector 0 (1-2) (A0),	U1.18-P1-H2/Q1			
Primary I/O book-0 Port 0 (1-2) Cable 1, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H2/Q1#			
Primary I/O book-0 Port 0 Connector 1 (1-3) (A1)	U1.18-P1-H2/Q2			
Primary I/O book-0 Port 0 Connector 1 (1-3) Cable 2, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H2/Q2#			
Primary I/O book-1 Port 1 Connector 2 (2-0) (B0)	U1.18-P1-H2/Q3			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Primary I/O book-1 Port 1 Connector 2 (2-0) Cable 3, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H2/Q3#			
Primary I/O book-1 Port 1 Connector 3 (2-1) (B1),	U1.18-P1-H2/Q4			
Primary I/O book-1 Port 1 Connector 3 (2-1) Cable 4 see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H2/Q4#			
ISA Bridge	U1.18-P1-H2			
Real Time Clock (RTC)	U1.18-P1-H2			
Battery (TOD)	U1.18-P1-H2-V1			
Error logging VPD Card (MCM -0)	U1.18-P1-H2.3			
Error logging VPD Card (MCM -1)	U1.18-P1-H2.5			
Error logging VPD Card (MCM -2)	U1.18-P1-H2.4			
Error logging VPD Card (MCM -3)	U1.18-P1-H2.6			
Error logging VPD Card (L3)	U1.18-P1-H2.1			
COD Security VPD Card	U1.18-P1-H2.2			
I/O Book 1, Slot 2	**U1.18-P1-H1**			
I/O Book 1, Port 11 Connector 3 (1-1) (B1)	U1.18-P1-H1/Q1			
I/O Book 1, Port 11 Connector 3 (1-1) Cable 1	U1.18-P1-H1/Q1#			
I/O Book 1, Port 11 Connector 2 (1-0) (B0)	U1.18-P1-H1/Q2			
I/O Book 1, Port 11 Connector 2 (1-0) Cable 2	U1.18-P1-H1/Q2#			
I/O Book 1, Port 10 Connector 1 (2-1) (A1)	U1.18-P1-H1/Q3			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Book 1, Port 10 Connector 1 (2-1) Cable 3	U1.18-P1-H1/Q3#			
I/O Book 1, Port 10 Connector 0 (2-0) (A0)	U1.18-P1-H1/Q4			
I/O Book 1, Port 10 Connector 0 (2-0) Cable 4	U1.18-P1-H1/Q4#			
I/O Book 1, Port 5 Connector 3 (1-1) (D1)	U1.18-P1-H1/Q5			
I/O Book 1, Port 5 Connector 3 (1-1) Cable 5, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H1/Q5#			
I/O Book 1, Port 5 Connector 2 (1-0) (D0)	U1.18-P1-H1/Q6			
I/O Book 1, Port 5 Connector 2 (1-0) Cable 6, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H1/Q6#			
I/O Book 1, Port 4 Connector 1 (2-1) (C1)	U1.18-P1-H1/Q7			
I/O Book 1, Port 4 Connector 1 (2-1) Cable 7, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H1/Q7#			
I/O Book 1, Port 4 Connector 0 (2-0) (C0)	U1.18-P1-H1/Q8			
I/O Book 1, Port 4 Connector 1 (2-0) Cable 8 , see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H1/Q8#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Book 2, Slot 2	**U1.18-P1-H3**			
I/O Book 2, Port 11 Connector 3 (1-1) (B1)	U1.18-P1-H3/Q1			
I/O Book 2, Port 11 Connector 3 (1-1) Cable 1	U1.18-P1-H3/Q1#			
I/O Book 2, Port 11 Connector 2 (1-0) (B0)	U1.18-P1-H3/Q2			
I/O Book 2, Port 11 Connector 2 (1-0) Cable 2	U1.18-P1-H3/Q2#			
I/O Book 2, Port 10 Connector 1 (2-1) (A1)	U1.18-P1-H3/Q3			
I/O Book 2, Port 10 Connector 1 (2-1) Cable 3	U1.18-P1-H3/Q3#			
I/O Book 2, Port 10 Connector 0 (2-0) (A0)	U1.18-P1-H3/Q4			
I/O Book 2, Port 10 Connector 0 (2-0) Cable 4	U1.18-P1-H3/Q4#			
I/O Book 2, Port 5 Connector 3 (1-1) (D1)	U1.18-P1-H3/Q5			
I/O Book 2, Port 5 Connector 3 (1-1) Cable 5, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H3/Q5#			
I/O Book 2, Port 5 Connector 2 (1-0) (D0)	U1.18-P1-H3/Q6			
I/O Book 2, Port 5 Connector 2 (1-0) Cable 6, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H3/Q6#			
I/O Book 2, Port 4 Connector 1 (2-1) (C1)	U1.18-P1-H3/Q7			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Book 2, Port 4 Connector 1 (2-1) Cable 7, see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H3/Q7#			
I/O Book 2, Port 4 Connector 0 (2-0) (C0)	U1.18-P1-H3/Q8			
I/O Book 2, Port 4 Connector 1 (2-0) Cable 8 , see "I/O Subsystem (One Side of Subsystem 1 with IBF) RIO Cabling to I/O Books, Two I/O Planar Loop Configuration" on page 38 for cable connections.	U1.18-P1-H3/Q8#			
I/O Book 3- Slot 3	**U1.18-P1-H4**			
I/O Book 3, Port 12 Connector 2 (1-0) (C0)	U1.18-P1-H4/Q1			
I/O Book 3, Port 12 Connector 2 (1-0) Cable 2	U1.18-P1-H4/Q1#			
I/O Book 3, Port 12 Connector 3 (1-1) (C1)	U1.18-P1-H4/Q2			
I/O Book 3, Port 12 Connector 3 (1-1) Cable 1	U1.18-P1-H4/Q2#			
I/O Book 3, Port 13 Connector 0 (2-0) (D0)	U1.18-P1-H4/Q3			
I/O Book 3, Port 13 Connector 0 (2-0) Cable 4	U1.18-P1-H4/Q3#			
I/O Book 3, Port 13 Connector 1 (2-1) (D1)	U1.18-P1-H4/Q4			
I/O Book 3, Port 13 Connector 1 (2-1) Cable 3	U1.18-P1-H4/Q4#			
I/O Book 3, Port 6 Connector 3 (1-1) (A0)	U1.18-P1-H4/Q5			
I/O Book 3, Port 6 Connector 3 (1-1) Cable 5	U1.18-P1-H4/Q5#			
I/O Book 3, Port 6 Connector 2 (1-0) (A1)	U1.18-P1-H4/Q6			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Book 3, Port 6 Connector 2 (1-0) Cable 6	U1.18-P1-H4/Q6#			
I/O Book 3, Port 7 Connector 1 (2-1) (B0)	U1.18-P1-H4/Q7			
I/O Book 3, Port 7 Connector 1 (2-1) Cable 7	U1.18-P1-H4/Q7#			
I/O Book 3, Port 7 Connector 0 (2-0) (B1)	U1.18-P1-H4/Q8			
I/O Book 3, Port 7 Connector 1 (2-0) Cable 8	U1.18-P1-H4/Q8#			
DCA 1-RH	**U1.18-P1-V1**			
DCA 1- BPA A - BPC - 5 Connector	U1.18-P1-V1/Q1			
DCA 1- BPA A - BPC -5 Cable	U1.18-P1-V1/Q1#			
DCA 1- BPA B - BPC - 5 Connector	U1.18-P1-V1/Q2			
DCA 1- BPA B - BPC -5 Cable	U1.18-P1-V1/Q2#			
DCA 2-RH	U1.18-P1-V2			
DCA 2- BPA A - BPC - 6 Connector	U1.18-P1-V2/Q1			
DCA 2- BPA A - BPC -6 Cable	U1.18-P1-V2/Q1#			
DCA 2- BPA B - BPC - 6 Connector	U1.18-P1-V2/Q2			
DCA 2- BPA B - BPC -6 Cable	U1.18-P1-V2/Q2#			
DCA 3-RH	U1.18-P1-V4			
DCA 3- BPA A - BPC - 7 Connector	U1.18-P1-V4/Q1			
DCA 3- BPA A - BPC - 7 Cable	U1.18-P1-V4/Q1#			
DCA 3- BPA B - BPC - 7 Connector	U1.18-P1-V4/Q2			
DCA 3- BPA B - BPC - 7 Cable	U1.18-P1-V4/Q2#			
DCA 4-RH	U1.18-P1-V5			
DCA 4- BPA A - BPD1 - 9 Connector	U1.18-P1-V5/Q1			
DCA 4- BPA A - BPD1 - 9 Cable	U1.18-P1-V5/Q1#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
DCA 4- BPA B - BPD1 - 9 Connector	U1.18-P1-V5/Q2			
DCA 4- BPA B - BPD1 - 9 Cable	U1.18-P1-V5/Q2#			
DCA 5-RH	U1.18-P1-V6			
DCA 5- BPA A - BPD1 - 10 Connector	U1.18-P1-V6/Q1			
DCA 5- BPA A - BPD1 - 10 Cable	U1.18-P1-V6/Q1#			
DCA 5- BPA B - BPD1 - 10 Connector	U1.18-P1-V6/Q2			
DCA 5- BPA B - BPD1 - 10 Cable	U1.18-P1-V6/Q2#			
DCA 6-RH	U1.18-P1-V8			
DCA 6- BPA A - BPD2 - 10 Connector	U1.18-P1-V8/Q1			
DCA 6- BPA A - BPD2 - 10 Cable	U1.18-P1-V8/Q1#			
DCA 6- BPA B - BPD2 - 10 Connector	U1.18-P1-V8/Q2			
DCA 6- BPA B - BPD2 - 10 Cable	U1.18-P1-V8/Q2#			
RH CAP Card	U1.18-P1-V3			
RH CAP Card	U1.18-P1-V7			
Hourglass Card Assembly	U1.18-P1-X5			
MCM Module 0 4 & 8 way	**U1.18-P1-C1**			
Processor 0 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-00		
Processor 1 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-01		
Processor 2 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-02		
Processor 3 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-03		
Processor 4 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-04		
Processor 5 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-05		
Processor 6 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-06		
Processor 7 (W/ L1 & L2 Cache)	U1.18-P1-C1	00-07		
MCM Module 3	**U1.18-P1-C2**			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Processor 24 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-24		
Processor 25 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-25		
Processor 26 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-26		
Processor 27 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-27		
Processor 28 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-28		
Processor 29 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-29		
Processor 30 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-30		
Processor 31 (W/ L1 & L2 Cache)	U1.18-P1-C2	00-31		
MCM Module 1	**U1.18-P1-C3**			
Processor 08 (W/ L1 & L2 Cache)	U1.18-P1-C3	00-08		
Processor 09 (W/ L1 & L2 Cache)	U1.18-P1-C3	00-09		
Processor 10 (W/ L1 & L2 Cache)	U1.18-P1-C3	00-10		
Processor 11 (W/ L1 & L2 Cache	U1.18-P1-C3	00-11		
Processor 12 (W/ L1 & L2 Cache	U1.18-P1-C3	00-12		
Processor 13 (W/ L1 & L2 Cache	U1.18-P1-C3	00-13		
Processor 14 (W/ L1 & L2 Cache	U1.18-P1-C3	00-14		
Processor 15 (W/ L1 & L2 Cache	U1.18-P1-C3	00-15		
MCM Module 2	**U1.18-P1-C4**			
Processor 16 (W/ L1 & L2 Cache	U1.18-P1-C4	00-16		
Processor 17 (W/ L1 & L2 Cache	U1.18-P1-C4	00-17		
Processor 18 (W/ L1 & L2 Cache	U1.18-P1-C4	00-18		
Processor 19 (W/ L1 & L2 Cache	U1.18-P1-C4	00-19		
Processor 20 (W/ L1 & L2 Cache	U1.18-P1-C4	00-20		
Processor 21 (W/ L1 & L2 Cache)	U1.18-P1-C4	00-21		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Processor 22 (W/ L1 & L2 Cache)	U1.18-P1-C4	00-22		
Processor 21 (W/ L1 & L2 Cache)	U1.18-P1-C4	00-23		
L3 Module (Proc 3D)	U1.18-P1-C5	00-00		
L3 Module (Proc 0A)	U1.18-P1-C6	00-00		
L3 Module (Proc 0B)	U1.18-P1-C7	00-00		
L3 Module (Proc 1C)	U1.18-P1-C8	00-00		
L3 Module (Proc 3B)	U1.18-P1-C9	00-00		
L3 Module (Proc 0C)	U1.18-P1-C10	00-00		
L3 Module (Proc 0D)	U1.18-P1-C11	00-00		
L3 Module (Proc 1A)	U1.18-P1-C12	00-00		
L3 Module (Proc 3A)	U1.18-P1-C13	00-00		
L3 Module (Proc 2D)	U1.18-P1-C14	00-00		
L3 Module (Proc 2C)	U1.18-P1-C15	00-00		
L3 Module (Proc 1B)	U1.18-P1-C16	00-00		
L3 Module (Proc 3C)	U1.18-P1-C17	00-00		
L3 Module (Proc 2B)	U1.18-P1-C18	00-00		
L3 Module (Proc 2A)	U1.18-P1-C19	00-00		
L3 Module (Proc 1D)	U1.18-P1-C20	00-00		
Passthru Card Module 1	U1.18-P1-C3	00-00		
Passthru Card Module 3	U1.18-P1-C2	00-00		
Fan Controller Assembly 1	**U1.18-X1**			
Fan Controller 1 TO BPC A Connector	U1.18-X1/Q1			
Fan Controller 1 TO BPC A Cable	U1.18-X1/Q1#			
Fan Controller 1 TO BPC B Connector	U1.18-X1/Q2			
Fan Controller 1 TO BPC B Cable	U1.18-X1/Q2#			
Fan Controller Assembly 2	**U1.18-X2**			
Fan Controller 2 TO BPC A Connector	U1.18-X2/Q1			
Fan Controller 2 TO BPC A Connector	U1.18-X2/Q1#			
Fan Controller 2 TO BPC B Connector	U1.18-X2/Q2#			
Fan Controller 2 TO BPC B Connector	U1.18-X2/Q2#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Fan Controller Assembly 3	**U1.18-X3**			
Fan Controller 3 TO BPC A Connector	U1.18-X3/Q1			
Fan Controller 3 TO BPC A Cable	U1.18-X3/Q1#			
Fan Controller 3 TO BPC B Connector	U1.18-X3/Q2			
Fan Controller 3 TO BPC B Cable	U1.18-X3/Q2#			
Fan Controller Assembly 4	**U1.18-X4**			
Fan Controller 4 TO BPC A Connector	U1.18-X4/Q1			
Fan Controller 4 TO BPC A Cable	U1.18-X4/Q1#			
Fan Controller 4 TO BPC B Connector	U1.18-X4/Q2			
Fan Controller 4 TO BPC B Cable	U1.18-X4/Q2#			
Fan Assembly 1	U1.18-F1			
Fan Assembly 2	U1.18-F2			
Fan Assembly 3	U1.18-F3			
Fan Assembly 4	U1.18-F4			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
		Media Subsystem Locations		
Media Drawer chassis	U1.17			
Media Drawer - Operator Panel,	U1.17-L1			
Operator Panel Connector	U1.17-L1/Q1			
Operator Panel Cable	U1.17-L1/Q1#			
System VPD Module	U1.17-L1-N1			
Media Drawer - Diskette	U1.17-D1			
Diskette Drive Connector	U1.17-D1/Q2			
Diskette Drive Cable	U1.17-D1/Q2#			
Media Drawer - DVD-RAM/CD-ROM	U1.x-Px-Ix/Z1-A1			
Media Drawer - Tape Drive	U1.x-Px-Ix/Z1-A0			
Media Drawer connector	U1.17-A1/Q3			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Media Drawer cable	U1.17-A1/Q3#			
Media Drawer Power Connector	U1.17-A1/Q4			
Media Drawer Power Cable	U1.17-A1/Q4#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Integrated Battery Feature Locations (If Installed)				
IBF (Battery) 1A to BPA A	U1.13-P1-V1	If Installed		
IBF 1A Connector	U1.13-P1-V1/Q1	If Installed		
IBF 1A Cable to BPA A - BPR 1	U1.13-P1-V1/Q1#	If Installed		
IBF (Battery) 2A to BPA A	U1.15-P1-V2	If Installed		
IBF 2A Connector	U1.15-P1-V2/Q1	If Installed		
IBF 2A Cable to BPA A - BPR 2	U1.15-P1-V2/Q1#	If Installed		
IBF (Battery) 1B to BPA B	U1.13-P2-V3	If Installed		
IBF 1B Connector	U1.13-P2-V3/Q1	If Installed		
IBF 1B Cable to BPA B -BPR 1	U1.13-P2-V3/Q1#	If Installed		
IBF (Battery) 2B to BPA B	U1.15-P2-V4	If Installed		
IBF 2B Connector	U1.15-P2-V4/Q1	If Installed		
IBF 2B Cable to BPA B -BPR 2	U1.15-P2-V4/Q1#	If Installed		
IBF (Battery) 3A to BPA A	U2.17-P1-V5	If Installed		
IBF 3A Connector	U2.17-P1-V5/Q1	If Installed		
IBF 3A Cable to BPA A - BPR 3	U2.17-P1-V5/Q1#	If Installed		
IBF (Battery) 3B to BPA B	U2.17-P2-V6	If Installed		
IBF 3B Connector	U2.17-P2-V6/Q1	If Installed		
IBF 3B Cable to BPA B - BPR 3	U2.17-P2-V6/Q1#	If Installed		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem 1 Locations				
I/O Subsystem 1 Chassis & Midplane Card	(MT/M Serial #) U1.9			
I/O Subsystem Left IO backplane assembly	**U1.9-P1**			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem Left IO backplane assembly VPD	U1.9-P1-N1			
EADS 1 - PCI Controller	U1.9-P1	2U-58, 2U-5A, 2U-5C, 2U-5E		
PCI Slot 1 Content	U1.9-P1-I1	2V-08 to 2V-0F or 2W-xx or 2X-xx		
PCI Slot 2 Content	U1.9-P1-I2	2Y-08 to 2Y-0F or 2Z-xx or 2a-xx		
PCI Slot 3 Content	U1.9-P1-I3	2b-08 to 2b-0F or 2c-xx or 2d-xx		
PCI Slot 4 Content	U1.9-P1-I4	2e-08 to 2e-0F or 2f-xx or 2g-xx		
EADS 2 - PCI Controller	U1.9-P1	2j-58, 2j-5A, 2j-5E		
PCI Slot 5 Content	U1.9-P1-I5	2k-08 to 2k-0F or 2m-xx or 2n-xx		
PCI Slot 6 Content	U1.9-P1-I6	2p-08 to 2p-0F or 2q-xx or 2r-xx		
PCI Slot 7 Content	U1.9-P1-I7	2v-08 to 2v-0F or 2w-xx or 2x-xx		
EADS 3 - PCI Controller	U1.9-P1	30-58, 30-5A, 30-5E		
PCI Slot 8 Content	U1.9-P1-I8	31-08 to 31-0F or 32-xx or 32-xx		
PCI Slot 9 Content	U1.9-P1-I9	34-08 to 34-0F or 35-xx or 36-xx		
PCI Slot 10 Content	U1.9-P1-I10	3A-08 to 3A-0F or 3B-xx or 3C-xx		
I/O Riser Card	U1.9-P1			
I/O Port Connector	U1.9-P1/Q1			
I/O Port Cable From GX1A-port 1	U1.9-P1/Q1#			
I/O Port Connector	U1.9-P1/Q2			
I/O Port Cable to port 0 on next Riser card U1.9-P2.1/Q1	U1.9-P1/Q2#			
I/O Subsystem Right IO backplane assembly	**U1.9-P2**			
I/O Subsystem Right IO backplane assembly VPD	U1.9-P2-N1			
EADS 1 - PCI Controller	U1.9-P2	3E-58, 3E-5A, 3E-5C, 3E-5E		
PCI Slot 1 Content	U1.9-P2-I1	3F-08 to 3F-0F or 3G-xx or 3H-xx		
PCI Slot 2 Content	U1.9-P2-I2	3J-08 to 3J-0F or 3K-xx or 3L-xx		
PCI Slot 3 Content	U1.9-P2-I3	3M-08 to 3M-0F or 3N-xx or 3P-xx		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
PCI Slot 4 Content	U1.9-P2-I4	3Q-08 to 3Q-0F or 3R-xx or 3S-xx		
EADS 2 - PCI Controller	U1.9-P2	3U-58, 3U-5A, 3U-5E		
PCI Slot 5 Content	U1.9-P2-I5	3V-08 to 3V-0F or 3W-xx or 3X-xx		
PCI Slot 6 Content	U1.9-P2-I6	3Y-08 to 3Y-0F or 3Z-xx or 3a-xx		
PCI Slot 7 Content	U1.9-P2-I7	3e-08 to 3e-0F or 3f-xx or 3a-xx		
EADS 3 - PCI Controller	U1.9-P2	3j-58, 3j-5A, 3j-5E		
PCI Slot 8 Content	U1.9-P2-I8	3k-08 to 3k-0F or 3m-xx or 3n-xx		
PCI Slot 9 Content	U1.9-P2-I9	3p-08 to 3p-0F or 3q-xx or 3r-xx		
PCI Slot 10 Content	U1.9-P2-I10	3v-08 to 3v-0F or 3w-xx or 3x-xx		
I/O Riser Card	U1.9-P2			
I/O Port Connector	U1.9-P2/Q1			
I/O Port Cable From Riser port 1 P1.1/Q1	U1.9-P2/Q1#			
I/O Port Connector	U1.9-P2/Q2			
I/O Port Cable to GX1A-port 2	U1.9-P2/Q2#			
I/O Subsystem DCA 1	**U1.9-V1**			
DCA 1 to (BPA B) BPD1-1A Connector P00	U1.9-V1/Q1			
DCA 1 to (BPA B) BPD1-1A Cable	U1.9-V1/Q1#			
DCA 1 to (BPA A) BPD1-1A Connector P00	U1.9-V1/Q2			
DCA 1 to (BPA A) BPD1-1A Cable	U1.9-V1/Q2#			
Thermal Sensor	U1.9-V1			
I/O Subsystem DCA 2	U1.9-V2			
DCA 2 to (BPA B) BPD1-1B Connector P01	U1.9-V2/Q1			
DCA 2 to (BPA B) BPD1-1B Cable	U1.9-V2/Q1#			
DCA 2 to (BPA A) BPD1-1B Connector P01	U1.9-V2/Q2			
DCA 2 to (BPA A) BPD1-1B Cable	U1.9-V2/Q2#			
Thermal Sensor	U1.9-V2			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem SCSI controller 1 on P1	U1.9-P1/Z1	2s-08		
I/O Subsystem SCSI controller 2 on P1	U1.9-P1/Z2	37-08		
I/O Subsystem SCSI controller 1 on P2	U1.9-P2/Z1	3b-08		
I/O Subsystem SCSI controller 2 on P2	U1.9-P2/Z2	3s-08		
DASD 4-pack Cage and card (1)	**U1.9-P3**			
DASD 4-pack Cage and card (1) VPD	U1.9-P3-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 2 on P2	U1.9-P2/Z2-A8	3s-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 2 on P2	U1.9-P2/Z2-A9	3s-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 2 on P2	U1.9-P2/Z2-Aa	3s-08-00-10,0		
SCSI DASD 4 hdisk at ID A connected to controller 2 on P2	U1.9-P2/Z2-Ab	3s-08-00-11,0		
SCSI Enclosure Services SES connected to controller 2 on P2	U1.9-P2/Z2-Bf	3s-08-00-15,0		
DASD 4-pack Cage and card (2)	**U1.9-P4**			
DASD 4-pack Cage and card (2) VPD	U1.9-P4-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 1 on P2	U1.9-P2/Z1-A8	3b-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 1 on P2	U1.9-P2/Z1-A9	3b-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P2	U1.9-P2/Z1-Aa	3b-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P2	U1.9-P2/Z1-Ab	3b-08-00-11,0		
SCSI Enclosure Services SES connected to controller 1 on P2	U1.9-P2/Z1-Af	3b-08-00-15,0		
DASD 4-pack Cage and card (3)	**U1.9-P5**			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
DASD 4-pack Cage and card (3) VPD	U1.9-P5-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 2 on P1	U1.9-P1/Z2-A8	37-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 2 on P1	U1.9-P1/Z2-A9	37-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 2 on P1	U1.9-P1/Z2-Aa	37-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 2 on P1	U1.9-P1/Z2-Ab	37-08-00-11,0		
SCSI Enclosure Services SES connected to controller 2 on P1	U1.9-P1/Z2-Af	37-08-00-15,0		
DASD 4-pack Cage and card (4)	**U1.9-P6**			
DASD 4-pack Cage and card (4) VPD	U1.9-P6-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 1 on P1	U1.9-P1/Z1-A8	2s-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 1 on P1	U1.9-P1/Z1-A9	2s-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P1	U1.9-P1/Z1-Aa	2s-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P1	U1.9-P1/Z1-Ab	2s-08-00-11,0		
SCSI Enclosure Services SES connected to controller 1 on P1	U1.9-P1/Z1-Af	2s-08-00-15,0		
I/O Subsystem Fan (MSA)	U1.9-F1			
I/O Subsystem Fan (MSA)	U1.9-F2			
I/O Subsystem Fan (MSA)	U1.9-F3			
I/O Subsystem Fan (MSA)	U1.9-F4			
Media Drawer Power Connector	U1.9-P1-V1/Q3			
Media Drawer Power Cable	U1.9-P1-V1/Q3#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
Media Drawer Power Connector	U1.9-P2-V2/Q3			
Media Drawer Power Cable	U1.9-P2-V2/Q3#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem 2 Locations				
I/O Subsystem 1 Chassis & Midplane Card	(MT/M Serial #) U1.5			
I/O Subsystem Left IO backplane assembly	**U1.5-P1**			
I/O Subsystem Left IO backplane assembly VPD	U1.5-P1-N1			
EADS 1 - PCI Controller	U1.5-P1	40-58, 40-5A, 40-5C, 40-5E		
PCI Slot 1 Content	U1.5-P1-I1	41-08 to 41-0F or 42-xx or 43-xx		
PCI Slot 2 Content	U1.5-P1-I2	44-08 to 44-0F or 45-xx or 47-xx		
PCI Slot 3 Content	U1.5-P1-I3	47-08 to 47-0F or 48-xx or 49-xx		
PCI Slot 4 Content	U1.5-P1-I4	4A-08 to 4A-0F or 4B-xx or 4C-xx		
EADS 2 - PCI Controller	U1.5-P1	4E-58, 4E-5A, 4E-5E		
PCI Slot 5 Content	U1.5-P1-I5	4F-08 to 4F-0F or 4G-xx or 4H-xx		
PCI Slot 6 Content	U1.5-P1-I6	4J-08 to 4J-0F or 4K-xx or 4L-xx		
PCI Slot 7 Content	U1.5-P1-I7	4Q-08 to 4Q-0F or 4R-xx or 4S-xx		
EADS 3 - PCI Controller	U1.5-P1	4U-58, 4U-5A, 4U-5E		
PCI Slot 8 Content	U1.5-P1-I8	4V-08 to 4V-0F or 4W-xx or 4X-xx		
PCI Slot 9 Content	U1.5-P1-I9	4Y-08 to 4Y-0F or 4Z-xx or 4a-xx		
PCI Slot 10 Content	U1.5-P1-I10	4e-08 to 4e-0F or 4f-xx or 4g-xx		
I/O Riser Card	U1.5-P1			
I/O Port Connector	U1.5-P1/Q1			
I/O Port Cable From GX1A-port 1	U1.5-P1/Q1#			
I/O Port Connector	U1.5-P1/Q2			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Port Cable to port 0 on next Riser card U1.5-P2.1/Q1	U1.5-P1/Q2#			
I/O Subsystem Right IO backplane assembly	**U1.5-P2**			
I/O Subsystem Right IO backplane assembly VPD	U1.5-P2-N1			
EADS 1 - PCI Controller	U1.5-P2	4j-58, 4j-5A, 4j-5C, 4j-5E		
PCI Slot 1 Content	U1.5-P2-I1	4k-08 to 4k-0F or 4m-xx or 4n-xx		
PCI Slot 2 Content	U1.5-P2-I2	4p-08 to 4p-0F or 4q-xx or 4r-xx		
PCI Slot 3 Content	U1.5-P2-I3	4s-08 to 4s-0F or 4t-xx or 4t-xx		
PCI Slot 4 Content	U1.5-P2-I4	4v-08 to 4v-0F or 4t-xx or 4u-xx		
EADS 2 - PCI Controller	U1.5-P2	50-58, 50-5A, 50-5E		
PCI Slot 5 Content	U1.5-P2-I5	51-08 to 51-0F or 52-xx or 53-xx		
PCI Slot 6 Content	U1.5-P2-I6	54-08 to 54-0F or 55-xx or 56-xx		
PCI Slot 7 Content	U1.5-P2-I7	5A-08 to 5A-0F or 5B-xx or 5C-xx		
EADS 3 - PCI Controller	U1.5-P2	5E-58, 5E-5A, 5E-5E		
PCI Slot 8 Content	U1.5-P2-I8	5F-08 to 5F-0F or 5G-xx or 5H-xx		
PCI Slot 9 Content	U1.5-P2-I9	5J-08 to 5J-0F or 5K-xx or 5L-xx		
PCI Slot 10 Content	U1.5-P2-I10	5Q-08 to 5Q-0F or 5R-xx or 5S-xx		
I/O Riser Card	U1.5-P2.1			
I/O Port Connector	U1.5-P2.1/Q1			
I/O Port Cable From Riser port 1 P1.1/Q1	U1.5-P2.1/Q1#			
I/O Port Connector	U1.5-P2.1/Q2			
I/O Port Cable to GX1A-port 2	U1.5-P2.1/Q2#			
I/O Subsystem DCA 1	**U1.5-V1**			
DCA 1 to (BPA B) BPD1-1A Connector P02	U1.5-V1/Q1			
DCA 1 to (BPA B) BPD1-1A Cable	U1.5-V1/Q1#			
DCA 1 to (BPA A) BPD1-1A Connector P02	U1.5-V1/Q2			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
DCA 1 to (BPA A) BPD1-1A Cable	U1.5-V1/Q2#			
Thermal Sensor	U1.5-V1			
I/O Subsystem DCA 2	U1.5-V2			
DCA 2 to (BPA B) BPD1-1B Connector P03	U1.5-V2/Q1			
DCA 2 to (BPA B) BPD1-1B Cable	U1.5-V2/Q1#			
DCA 2 to (BPA A) BPD1-1B Connector P03	U1.5-V2/Q2			
DCA 2 to (BPA A) BPD1-1B Cable	U1.5-V2/Q2#			
Thermal Sensor	U1.5-V2			
I/O Subsystem SCSI controller 1 on P1	U1.5-P1/Z1	4M-08		
I/O Subsystem SCSI controller 2 on P1	U1.5-P1/Z2	4b-08		
I/O Subsystem SCSI controller 1 on P2	U1.5-P2/Z1	57-08		
I/O Subsystem SCSI controller 2 on P2	U1.5-P2/Z2	5M-08		
DASD 4-pack Cage and card (1)	**U1.5-P3**			
DASD 4-pack Cage and card (1) VPD	U1.5-P3-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 2 on P2	U1.5-P2/Z2-A8	5M-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 2 on P2	U1.5-P2/Z2-A9	5M-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 2 on P2	U1.5-P2/Z2-Aa	5M-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 2 on P2	U1.5-P2/Z2-Ab	5M-08-00-11,0		
SCSI Enclosure Services SES connected to controller 2 on P2	U1.5-P2/Z2-Af	5M-08-00-15,0		
DASD 4-pack Cage and card (2)	**U1.5-P4**			
DASD 4-pack Cage and card (2) VPD	U1.5-P4-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 1 on P2	U1.5-P2/Z1-A8	57-08-00-8,0		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
SCSI DASD 2 hdisk at ID 9 connected to controller 1 on P2	U1.5-P2/Z1-A9	57-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P2	U1.5-P2/Z1-Aa	57-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P2	U1.5-P2/Z1-Ab	57-08-00-11,0		
SCSI Enclosure Services SES connected to controller 1 on P2	U1.5-P2/Z1-Af	57-08-00-15,0		
DASD 4-pack Cage and card (3)	**U1.5-P5**			
DASD 4-pack Cage and card (3) VPD	U1.5-P5-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 1 on P2	U1.5-P1/Z2-A8	4b-80-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 1 on P2	U1.5-P1/Z2-A9	4b-80-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P2	U1.5-P1/Z2-Aa	4b-80-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P2	U1.5-P1/Z2-Ab	4b-80-00-11,0		
SCSI Enclosure Services SES connected to controller 2 on P1	U1.5-P1/Z2-Af	4b-80-00-15,0		
DASD 4-pack Cage and card (4)	**U1.5-P6**			
DASD 4-pack Cage and card (4) VPD	U1.5-P6-N1			
SCSI DASD 1 hdisk at ID8 connected to controller 1 on P1	U1.5-P1/Z1-A8	4M-08-00-8,0		
SCSI DASD 2 hdisk at ID9 connected to controller 1 on P1	U1.5-P1/Z1-A9	4M-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P1	U1.5-P1/Z1-Aa	4M-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P1	U1.5-P1/Z1-Ab	4M-08-00-11,0		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
SCSI Enclosure Services SES connected to controller 1 on P1	U1.5-P1/Z1-Af	4M-08-00-15,0		
I/O Subsystem Fan (MSA)	U1.5-F1			
I/O Subsystem Fan (MSA)	U1.5-F2			
I/O Subsystem Fan (MSA)	U1.5-F3			
I/O Subsystem Fan (MSA)	U1.5-F4			
Media Drawer Power Connector	U1.5-P1-X1/Q3			
Media Drawer Power Cable	U1.5-P1-X1/Q3#			
Media Drawer Power Connector	U1.5-P2-X2/Q3			
Media Drawer Power Cable	U1.5-P2-X2/Q3#			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Subsystem 3 Locations				
I/O Subsystem 1 Chassis & Midplane Card	(MT/M Serial #) U1.1			
I/O Subsystem Left IO backplane assembly	**U1.1-P1**			
I/O Subsystem Left IO backplane assembly VPD	U1.1-P1-N1			
EADS 1 - PCI Controller	U1.1-P1	5U-58, 5U-5A, 5U-5C, 5U-5E		
PCI Slot 1 Content	U1.1-P1-I1	5V-08 to 5V-0F or 5W-xx or 5X-xx		
PCI Slot 2 Content	U1.1-P1-I2	5Y-08 to 5Y-0F or 5Z-xx or 5a-xx		
PCI Slot 3 Content	U1.1-P1-I3	5b-08 to 5b-0F or 5c-xx or 5d-xx		
PCI Slot 4 Content	U1.1-P1-I4	5e-08 to 5e-0F or 5f-xx or 5g-xx		
EADS 2 - PCI Controller	U1.1-P1	5j-58, 5j-5A, 5j-5E		
PCI Slot 5 Content	U1.1-P1-I5	5k-08 to 5k-0F or 5m-xx or 5n-xx		
PCI Slot 6 Content	U1.1-P1-I6	5p-08 to 5p-0F or 5q-xx or 5r-xx		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
PCI Slot 7 Content	U1.1-P1-I7	5v-08 to 5v-0F or 5w-xx or 5w-xx		
EADS 3 - PCI Controller	U1.1-P1	60-58, 60-5A, 60-5E		
PCI Slot 8 Content	U1.1-P1-I8	61-08 to 61-0F or 62-xx or 63-xx		
PCI Slot 9 Content	U1.1-P1-I9	64-08 to 64-0F or 65-xx or 66-xx		
PCI Slot 10 Content	U1.1-P1-I10	6A-08 to 6A-0F or 6B-xx or 6C-xx		
I/O Riser Card	U1.1-P1			
I/O Port Connector	U1.1-P1/Q1			
I/O Port Cable From GX1A-port 1	U1.1-P1/Q1#			
I/O Port Connector	U1.1-P1/Q2			
I/O Port Cable to port 0 on next Riser card U1.1-P2.1/Q1	U1.1-P1/Q2#			
I/O Subsystem Right IO backplane assembly	**U1.1-P2**			
I/O Subsystem Right IO backplane assembly VPD	U1.1-P2-N1			
EADS 1 - PCI Controller	U1.1-P2	6E-58, 6E-5A, 6E-5C, 6E-5E		
PCI Slot 1 Content	U1.1-P2-I1	6F-08 to 6F-0F or 6G-xx or 6H-xx		
PCI Slot 2 Content	U1.1-P2-I2	6J-08 to 6J-0F or 6K-xx or 6L-xx		
PCI Slot 3 Content	U1.1-P2-I3	6M-08 to 6M-0F or 6N-xx or 6P-xx		
PCI Slot 4 Content	U1.1-P2-I4	6Q-08 to 6Q-0F or 6R-xx or 6S-xx		
EADS 2 - PCI Controller	U1.1-P2	6U-58, 6U-5A, 6U-5E		
PCI Slot 5 Content	U1.1-P2-I5	6V-08 to 6V1-0F or 6W-xx or 6F-xx		
PCI Slot 6 Content	U1.1-P2-I6	6Y-08 to 6Y-0F or 6Z-xx or 6a-xx		
PCI Slot 7 Content	U1.1-P2-I7	6e-08 to 6Y-0F or 6f-xx or 6g-xx		
EADS 3 - PCI Controller	U1.1-P2	6j-58, 6j-5A, 6j-5E		
PCI Slot 8 Content	U1.1-P2-I8	6k-08 to 6Y-0F or 6m-xx or 6n-xx		
PCI Slot 9 Content	U1.1-P2-I9	6p-08 to 6p-0F or 6q-xx or 6r-xx		
PCI Slot 10 Content	U1.1-P2-I10	6v-08 to 6v-0F or 6w-xx or 6x-xx		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
I/O Riser Card	U1.1-P2			
I/O Port Connector	U1.1-P2/Q1			
I/O Port Cable From Riser port 1 P1.1/Q1	U1.1-P2/Q1#			
I/O Port Connector	U1.1-P2/Q2			
I/O Port Cable to GX1A-port 2	U1.1-P2/Q2#			
I/O Subsystem DCA 1	**U1.1-V1**			
DCA 1 to (BPA B) BPD1-1A Connector P04	U1.1-V1/Q1			
DCA 1 to (BPA B) BPD1-1A Cable	U1.1-V1/Q1#			
DCA 1 to (BPA A) BPD1-1A Connector P04	U1.1-V1/Q2			
DCA 1 to (BPA A) BPD1-1A Cable	U1.1-V1/Q2#			
Thermal Sensor	U1.1-V1			
I/O Subsystem DCA 2	U1.1-V2			
DCA 2 to (BPA B) BPD1-1B Connector P05	U1.1-V2/Q1			
DCA 2 to (BPA B) BPD1-1B Cable	U1.1-V2/Q1#			
DCA 2 to (BPA A) BPD1-1B Connector P05	U1.1-V2/Q2			
DCA 2 to (BPA A) BPD1-1B Cable	U1.1-V2/Q2#			
Thermal Sensor	U1.1-V2			
I/O Subsystem SCSI controller 1 on P1	U1.1-P1/Z1	5s-08		
I/O Subsystem SCSI controller 2 on P1	U1.1-P1/Z2	67-08		
I/O Subsystem SCSI controller 1 on P2	U1.1-P2/Z1	6b-08		
I/O Subsystem SCSI controller 2 on P2	U1.1-P2/Z2	6s-08		
DASD 4-pack Cage and card (1)	**U1.1-P3**			
DASD 4-pack Cage and card (1) VPD	U1.1-P3-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 2 on P2	U1.1-P2/Z2-A8	6s-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 2 on P2	U1.1-P2/Z2-A9	6s-08-00-9,0		

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
SCSI DASD 3 hdisk at ID A connected to controller 2 on P2	U1.1-P2/Z2-Aa	6s-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 2 on P2	U1.1-P2/Z2-Ab	6s-08-00-11,0		
SCSI Enclosure Services SES connected to controller 2 on P2	U1.1-P2/Z2-Bf	6s-08-00-15,0		
DASD 4-pack Cage and card (2)	**U1.1-P4**			
DASD 4-pack Cage and card (2) VPD	U1.1-P4-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 1 on P2	U1.1-P2/Z1-A8	6b-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 1 on P2	U1.1-P2/Z1-A9	6b-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P2	U1.1-P2/Z1-Aa	6b-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P2	U1.1-P2/Z1-Ab	6b-08-00-11,0		
SCSI Enclosure Services SES connected to controller 1 on P2	U1.1-P2/Z1-Af	6b-08-00-15,0		
DASD 4-pack Cage and card (3)	**U1.1-P5**			
DASD 4-pack Cage and card (3) VPD	U1.1-P5/Z1-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 2 on P1	U1.1-P1/Z2-A8	67-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 2 on P1	U1.1-P1/Z2-A9	67-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 2 on P1	U1.1-P1/Z2-Aa	67-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 2 on P1	U1.1-P1/Z2-Ab	67-08-00-11,0		
SCSI Enclosure Services SES connected to controller 2 on P1	U1.1-P1/Z2-Af	67-08-00-15,0		
DASD 4-pack Cage and card (4)	**U1.1-P6**			

FRU Name	Location Code	AIX Location Code	Physical Connection	Logical Connection
DASD 4-pack Cage and card (4) VPD	U1.1-P6/Z2-N1			
SCSI DASD 1 hdisk at ID 8 connected to controller 1 on P1	U1.1-P1/Z1-A8	5s-08-00-8,0		
SCSI DASD 2 hdisk at ID 9 connected to controller 1 on P1	U1.1-P1/Z1-A9	5s-08-00-9,0		
SCSI DASD 3 hdisk at ID A connected to controller 1 on P1	U1.1-P1/Z1-Aa	5s-08-00-10,0		
SCSI DASD 4 hdisk at ID B connected to controller 1 on P1	U1.1-P1/Z1-Ab	5s-08-00-11,0		
SCSI Enclosure Services SES connected to controller 1 on P1	U1.1-P1/Z1-Af	5s-08-00-15,0		
I/O Subsystem Fan (MSA)	U1.1-F1			
I/O Subsystem Fan (MSA)	U1.1-F2			
I/O Subsystem Fan (MSA)	U1.1-F3			
I/O Subsystem Fan (MSA)	U1.1-F4			
Media Drawer Power Connector	U1.1-P1-X1/Q3			
Media Drawer Power Cable	U1.1-P1-X1/Q3#			
Media Drawer Power Connector	U1.1-P2-X2/Q3			
Media Drawer Power Cable	U1.1-P2-X2/Q3#			

System Requirements for Adding Processor MCMs

Processor MCM	Total BUS Pass-Thru Modules (FC5257) Required, Locations	Total DCA, Power Converter (FC 6170 and 6189) Required, Locations	Total Capacitor Books (FC 6198) Required Locations	L3 Cache Plug Positions	VPD Locations	Memory Book Plug Locations
Add 1st MCM Position C1	Qty = 0	FC 6170 (2X) U1.18-P1-V1 U1.18-P1-V2	Qty = 1 U1.18-P1-V3	C6, C7, C10, C11	U1.18-P1-H2.3	U1.18-P1-M2 U1.18-P1-M3
Add 2nd MCM Position C4	Qty = 2 U1.18-P1-C3 U1.18-P1-C2	FC 6170 (2X) U1.18-P1-V1 U1.18-P1-V2 FC 6189 (1X) U1.18-P1-V4	Qty = 1 U1.18-P1-V3	C14, C15, C18, C19	U1.18-P1-H2.4	U1.18-P1-M7 U1.18-P1-M6
Add 3rd MCM Position C3	Qty = 1 U1.18-P1-C2	FC 6170 (2X) U1.18-P1-V1 U1.18-P1-V2 FC 6189 (2X) U1.18-P1-V4 U1.18-P1-V5	Qty = 2 U1.18-P1-V3 U1.18-P1-V7	C8, C12, C16, C20	U1.18-P1-H2.5	U1.18-P1-M4 U1.18-P1-M8

| Add 4th MCM Position C2 | Qty = 0 | FC 6170 (2X) U1.18-P1-V1 U1.18-P1-V2 FC 6189 (3X) U1.18-P1-V4 U1.18-P1-V5 U1.18-P1-V6 | Qty = 2 U1.18-P1-V3 U1.18-P1-V7 | C5, C9, C13, C17 | U1.18-P1-H2.6 | U1.18-P1-M5 U1.18-P1-M1 |

Number of Bulk Power Regulators (BPR) FC 6186 Required as a Function of MCMs and I/O Drawers

	1 MCM	2 MCMs	3 MCMs	4 MCMs
1 I/O Drawer Location U1.9	2 BPRs Front BPA Front BPA U1.35-P1-V1 Back BPA U1.35-P2-V1	2 BPRs	4 BPRs	4 BPRs
2 I/O Drawer Location U1.5	2 BPRs	2 BPRs	4 BPRs Front BPA U1.35-P1-V1 U1.35-P1-V2 Back BPA U1.35-P2-V 1 U1.35-P2-V2	4 BPRs
3 I/O Drawer Location U1.1		4 BPRs	4 BPRs	4 BPRs
4 I/O Drawer at Rack #1, Loc= U1.13 at Rack#2, Location U2.9			4 BPRs	4 BPRs

5 I/O Drawer Location U2.1			6 BPRs Front BPA U1.35-P1-V1 U1.35-P1-V2 U1.35-P1-V3 Back BPA U1.35-P2-V1 U1.35-P2-V2 U1.35-P2-V3	6 BPRs
6 I/O Drawer Location U2.5			6 BPRs	6 BPRs
7 I/O Drawer Location U2.13				6 BPRs
8 I/O Draw Location U2.19				6 BPRs

Specifications

This section contains specifications for the 406/70 system.

406/70 Physical Specifications and Loads

The following tables illustrate the physical, electrical and thermal, acoustical, and environmental characteristics of various 406/70 system configurations.

Power and Electrical Requirements

Redundant power line cords are standard on the 406/70. The system uses dual ac power cords. For maximum availability, each of the power cords should be fed from independent power grids.

The following table illustrates electrical and thermal characteristics for the 406/70.

Electrical/Thermal Characteristic			
Rated Voltage (V ac, 3 phase)	200 to 240	380 to 415	480
Rated Current (A, per phase)	45	25	20
Frequency (Hertz)	50 to 60	50 to 60	50 to 60
Power (Maximum in kW)	6.7	6.7	6.7
Typical, full load power factor (pf)	0.99	0.97	0.93
Inrush current (Amps)	162 max (see note 1 below)		
Thermal output (Maximum kBtu/hr)	22.8	22.8	22.8

Notes:

1. Inrush currents occur only at initial application of power (very short duration for charging capacitors). No inrush currents occur during the normal power off-on cycle.
2. System will function normally with a nominal input voltage in the range of 200-480 V, AC, three phase.

The following table illustrates the line cord options for the 406/70 with their geographic, breaker rating, and cord information.

3-Phase Supply Voltage (50/60 Hz)	200-240 V	380-415 V	480 V
Geography	United States, Canada, Japan	Europe, Middle East, Africa, Asia Pacific	United States, Canada
Customer Circuit Breaker Rating (see Note 1 below)	60 A	30 A	30 A
Cord Information	6 and 14 foot, 6 AWG line cord	14 foot, 6 or 8 AWG line cord, (electrician installed)	6 and 14 foot, 10 AWG line cord
Recommended Receptacle	IEC309, 60 A, type 460R9W (not provided)	Not specified, electrician installed	IEC309, 30 A, type 430R7W (not provided)

Notes:

1. The exact circuit breaker ratings may not be available in all countries. Where the specified circuit breaker ratings are not acceptable, use the nearest available rating. Use of a time delayed circuit breaker is recommended.

Phase Imbalance: All systems are provided with 2 bulk power assemblies (BPAs), with separate line cords. Each BPA will use only 2 phases of a 3-phase power system, causing phase imbalance. Phase currents will be divided between 2 line cords in normal operation.

The system has one bulk power regulator (BPR) per BPA, with its Phase A and Phase B Line Currents determined by Power/Vline, and a Phase C Line Current of 0.

Note: Power is calculated from "Total System Power Consumption" on page 100. Vline is line-to-line nominal input voltage.

Balancing Power Panel Loads: The system requires three-phase power. Two of three phases will carry an equal amount of current, with no current drawn on the third phase. The following figure is an example of feeding several loads of this type from two power panels in a way that balances the load among the three phases.
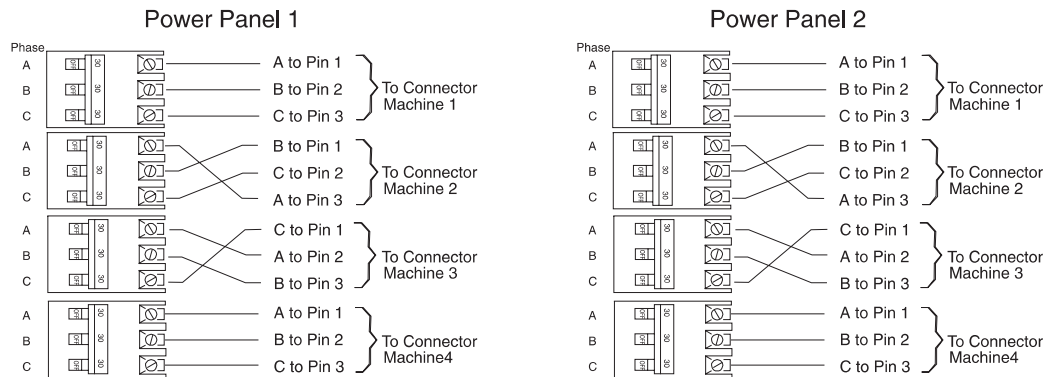
The method illustrated in the preceding figure requires that the connection from the three poles of each breaker to the three phase pins of a connector be varied. Some electricians may prefer to maintain a consistent wiring sequence from the breakers to the connectors. The following figure shows a way to balance the load without changing the wiring on the output of any breakers. The three-pole breakers are alternated with single-pole breakers, so that the three-pole breakers do not all begin on Phase A.
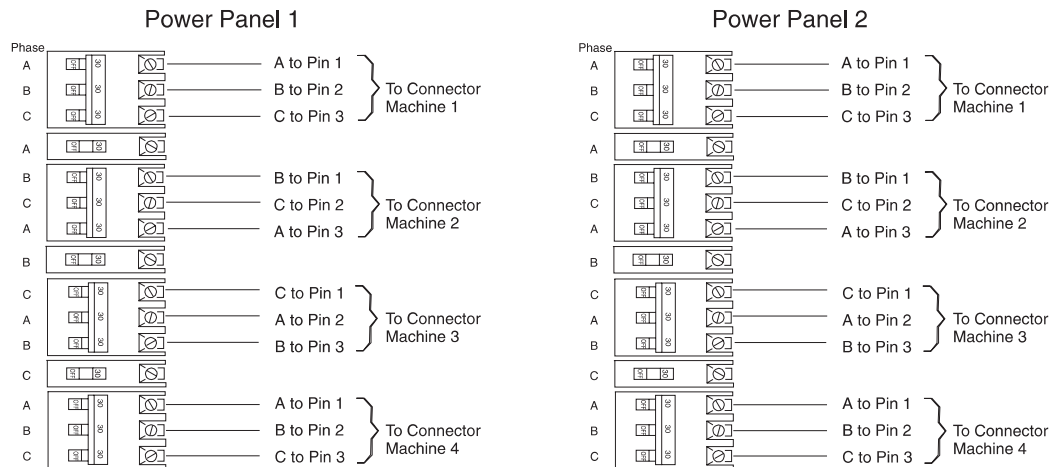
The following figure shows another way of distributing the unbalanced load evenly. Using this method, the three-pole breakers are alternated with two-pole breakers.

Power Panel 1

Phase		
A		A to Pin 1
B		B to Pin 2 — To Connector Machine 1
C		C to Pin 3
A		
B		
C		C to Pin 1
A		A to Pin 2 — To Connector Machine 2
B		B to Pin 3
C		
A		
B		B to Pin 1
C		C to Pin 2 — To Connector Machine 3
A		A to Pin 3
B		
C		
A		A to Pin 1
B		B to Pin 2 — To Connector Machine 4
C		C to Pin 3

Power Panel 2

Phase		
A		A to Pin 1
B		B to Pin 2 — To Connector Machine 1
C		C to Pin 3
A		
B		
C		C to Pin 1
A		A to Pin 2 — To Connector Machine 2
B		B to Pin 3
C		
A		
B		B to Pin 1
C		C to Pin 2 — To Connector Machine 3
A		A to Pin 3
B		
C		
A		A to Pin 1
B		B to Pin 2 — To Connector Machine 4
C		C to Pin 3

Power Cord Configuration: The power cords exit the system from different points of the frame as indicated in the following illustration.

Rear

A

Front

(Top Down View)
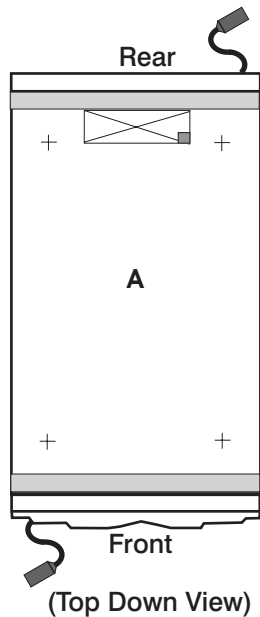
Checking the Facility Outlets and Power Source:

CAUTION:
Do not touch the receptacle or the receptacle faceplate with anything other than your test probes before you have met the requirements in "Checking the Facility Outlets and Power Source" below.

Performing the following will ensure that appropriate power will be used by the 406/70. The following checklist is for reference purposes, and will likely be performed by a service engineer prior to installation.

__ 1. The 406/70 is equipped to use 200-240 V / 380-415 V / 480 V ac, three-phase. Check that the correct power source is available.

__ 2. Before system installation, locate and turn off the branch circuit CB (circuit breaker). Attach tag S229-0237, which reads "Do Not Operate."

   Note: All measurements are made with the receptacle faceplate in the normally installed position.

__ 3. Some receptacles are enclosed in metal housings. On receptacles of this type, perform the following steps:
   a. Check for less than 1 volt from the receptacle case to any grounded metal structure in the building, such as a raised-floor metal structure, water pipe, building steel, or similar structure.
   b. Check for less than 1 volt from receptacle ground pin to a grounded point in the building.

   Note: If the receptacle case or faceplate is painted, be sure the probe tip penetrates the paint and makes good electrical contact with the metal.

__ 4. Check the resistance from the ground pin of the receptacle to the receptacle case. Check resistance from the ground pin to building ground. The reading should be less than 1.0 ohm, which indicates the presence of a continuous grounding conductor.

__ 5. If any of the checks made in substeps 2 and 3 are not correct, remove the power from the branch circuit and make the wiring corrections; then check the receptacle again.

   Note: Do not use the digital multimeter to measure grounding resistance.

__ 6. Check for infinite resistance between the phase pins. This is a check for a wiring short.
   CAUTION:
   If the reading is other than infinity, do not proceed! You must make the necessary wiring corrections to satisfy the above criteria before continuing. Do not turn on the branch circuit CB until all the above steps are satisfactorily completed.

__ 7. Remove tag S229-0237, which reads "Do Not Operate."

__ 8. Turn on the branch circuit CB. Measure for appropriate voltages between phases. If no voltage is present on the receptacle case or grounded pin, the receptacle is safe to touch.

__ 9. With an appropriate meter, verify that the voltage at the outlet is correct.

__ 10. Verify that the grounding impedance is correct by using the ECOS 1020, 1023, B7106, or an appropriately approved ground impedance tester.

__ 11. Turn off the branch circuit CB.

__ 12. Attach tag S229-0237, which reads "Do Not Operate."

__ 13. You are now ready to install and connect the power cables to the 406/70.

Additional Installation Considerations: In the United States, installation must be made in accordance with Article 645 of the National Electric Code (NEC). In Canada, installation must be in accordance with Article 12-020 of the Canadian Electrical Code (CEC).

Dimensions and Weight

Physical Characteristic	Slimline Doors	Acoustical Doors
Height	2025 mm (79.72 in.)	2025 mm (79.72 in.)

Width	785 mm (30.91 in.)	785 mm (30.91 in.)
Depth	1342 mm (52.83 in.)	1494 mm (58.83 in.)
Weight (maximum configuration)	1085 kg (2392 lbs.)	1099 kg (2422 lbs.)

Note: When moving or relocating certain configurations of the system, the Bulk Power Regulators (BPRs) must be removed from the top of the rack (front and rear) to ensure product stability. Specifically, removal of the BPR from the front and rear is required in systems that have a single I/O drawer.

System Weights by Configuration

	Total System Weight (Pounds)		
	1 I/O Subsystem	2 I/O Subsystems	3 I/O Subsystems
Slimline Doors With IBF	2062	2227	2392
Slimline Doors Without IBF	1865	2030	2195
Acoustical Doors With IBF	2092	2257	2422
Acoustical Doors Without IBF	1923	2088	2253
No Doors With IBF	2004	2169	2334
No Doors Without IBF	1807	1972	2137

	Total System Weight (Kilograms)		
	1 I/O Subsystem	2 I/O Subsystems	3 I/O Subsystems
Slimline Doors With IBF	935	1010	1085
Slimline Doors Without IBF	846	921	996
Acoustical Doors With IBF	949	1024	1099
Acoustical Doors Without IBF	872	947	1022
No Doors With IBF	909	984	1059
No Doors Without IBF	820	894	969

Acoustical Noise Emissions

	Acoustical Characteristic			
Product Configuration	Declared A-Weighted Sound Power Level, L_{WAd} (B)		Declared A-Weighted Sound Pressure Level, LpAm (dB)	
	Operating	Idle	Operating	Idle
7040 Acoustical Doors	7.5	7.5	57	57
7040 Slimline Doors	7.9	7.9	62	62

Notes:

1. Noise levels cited are for a typical configuration (Bulk Power, CEC cage, battery option, media drawer, and two I/O drawers).

2. The 0.6-B (6-dB) reduction in noise emission levels with the acoustical rear door corresponds to a factor of 4 reduction. That is, the noise level of a single frame with thin covers is about the same as the noise level of four frames with acoustical covers.

3. L_{WAd} is the upper-limit A-weighted sound power level; LpAm is the mean A-weighted sound pressure level at the 1-meter bystander positions; 1 B = 10 dB.

4. All measurements made in conformance with ISO 7779 and declared in conformance with ISO 9296.

Environmental Specifications

Environmental Specification	Operating	Non-Operating	Storage	Shipping
Temperature	10 to 32°C (50 to 90°F) Max. of 24 ° C (75.2 ° F) with 4mm tape or DVD RAM in rear positions of the Media Subsystem	10 to 43°C (50 to 109°F)	1 to 60°C (34 to 140°F)	−40 to 60°C (−40 to 140°F)
Relative Humidity (Noncondensing)	8 to 80 %	8 to 80 %	5 to 80 %	5 to 100 %
Maximum Wet Bulb	23°C (73°F)	27°C (73°F)	29°C (84°F)	29°C (84°F)

Notes:

1. Storage and shipping specifications are valid for a maximum duration of two weeks each.

2. The upper limit of the dry bulb temperature must be derated 1 degree C per 189 m (619 ft.) above 1295 m (4250 ft.). Maximum altitude for 1.1 GHz modules is 3048 m (10,000 ft.) and for 1.3 GHz modules is 2134 m (7000 ft)

Weight Distribution

The following table shows dimensions and weights used to calculate floor loading for the 406/70. All floor-loading calculations are intended for a raised-floor environment.

	1 Frame with Slimline Covers	1 Frame with Acoustical Covers
Weight	1085 kg (2392 lbs.)	1099 kg (2422 lbs.)
Width	750 mm (29.5 in.)	750 mm (29.5 in.)
Depth	1173 mm (46.2 in.)	1173 mm (46.2 in.)

Notes:

1. The values in the table may be used with the Floor Loading Calculation Program available on the IP Web site.

2. All floor-loading calculations are intended for a raised-floor environment.

The following table shows floor-loading specifications for systems with slimline covers. The values contained in the Condition column are described following the table.

Condition	a (sides) mm (in.)	b (front) mm (in.)	c (back mm (in.)	1 Frame kg/m^2 (lb./ft.^{2})
1	25 (1.0)	135 (5.3)	135 (5.3)	1006.2 (206.1)
2	25 (1.0)	554 (21.8)	655 (25.8)	657.5 (134.7.)
3	25 (1.0)	762 (30.0)	762 (30.0)	595.0 (121.9)
4	254 (10.0)	554 (21.8)	655 (25.8)	462.8 (94.8)
5	254 (10.0)	762 (30.0)	762 (30.0)	423.0 (86.6)
6	508 (20.0)	554 (21.8)	655 (25.8)	364.7 (74.7)
7	508 (20.0)	762 (30.0)	762 (30.0)	336.4 (68.9)
8	554 (21.8)	762 (30.0)	655 (25.8)	352.8 (72.3)
9	486 (19.1)	554 (21.8)	762 (30.0)	342.0 (70.0)
10	762 (30.0)	434 (17.1)	434 (17.1)	342.0 (70.0)

| 11 | 762 (30.0) | 762 (30.0) | 762 (30.0) | 288.5 (59.1) |

Definition of Conditions:

- Condition 1 indicates maximum floor loading when systems are stored cover-to-cover on all four sides with covers installed.
- Conditions 2 and 3 indicate floor loading when the system has no side clearance (beyond side covers) on both sides while front/back distances varied.
- Conditions 4 through 8 indicate floor loading at various points below the maximum weight-distribution distance of 762 mm (30.0 in.) from each edge of the frame.
- Conditions 9 through 10 indicate floor-loading options when the installation is limited to 342.0 kg/m^2 (70.0 lb/ft$^{2)}$).
- Condition 11 is the minimum floor loading required, based on the maximum weight-distribution area (30.0 in. from each side of the base frame).

Notes:

1. Service clearance is independent from weight distribution distance and must be at least 45 in. for the front of the frame and 36 in. for the rear of the frame (measured from the base frame).
2. Weight-distribution areas should not be overlapped.
3. Floor-loading weight distribution distances should not exceed 762 mm (30 in.) in any direction when measured from the base frame.

The following table shows floor-loading specifications for systems with acoustical covers. The values contained in the Condition column are described following the table.

Condition	a (sides) mm (in.)	b (front) mm (in.)	c (back mm (in.)	1 Frame kg/m^2 (lb./ft. ^{2})
1	25 (1.0)	135 (5.3)	135 (5.3)	1019.7 (208.9)
2	25 (1.0)	554 (21.8)	757 (29.8)	643.0 (131.7)
3	25 (1.0)	762 (30.0)	762 (30.0)	601.8 (123.3)
4	254 (10.0)	554 (21.8)	757 (29.8)	453.6 (92.9)
5	254 (10.0)	762 (30.0)	762 (30.0)	427.3 (87.5)
6	508 (20.0)	554 (21.8)	757 (29.8)	358.2 (73.4)
7	508 (20.0)	762 (30.0)	762 (30.0)	339.5 (69.5)
8	498 (19.6)	762 (30.0)	762 (30.0)	342.0 (70.0)
9	762 (30.0)	554 (21.8)	757 (29.8)	305.4 (62.6)
10	762 (30.0)	450 (17.7)	450 (17.7)	341.9 (70)
11	762 (30.0)	762 (30.0)	762 (30.0)	290.9 (59.6)

Definition of Conditions:

• Condition 1 indicates maximum floor loading when systems are stored cover-to-cover on all four sides with covers installed.

• Conditions 2 and 3 indicate floor loading when the system has no side clearance (beyond side covers) on both sides while front/back distances varied.

• Conditions 4 through 8 indicate floor loading at various points below the maximum weight-distribution distance of 762 mm (30.0 in.) from each edge of the frame.

• Conditions 9 through 10 indicate floor-loading options when the installation is limited to 342.0 kg/m^2 (70.0 lb/ft$^{2)}$).

• Condition 11 is the minimum floor loading required, based on the maximum weight-distribution area (30.0 in. from each side of the base frame).

Notes:

1. Service clearance is independent from weight-distribution distance and must be at least 45 in. at the front of the frame and 36 in. at the rear of the frame (measured from the base frame).

2. Weight-distribution areas should not be overlapped.

3. Floor-loading weight distribution distances should not exceed 762 mm (30 in.) in any direction when measured from the base frame.

Plan Views

The following illustration shows dimensional planning information for single-frame systems and double-frame systems.

SLIMLINE COVERS

750 mm
(29.5 in.)

18 mm
(0.7 in.)

58 mm (2.3 in.)
Slimline Rear Cover

1174 mm
(46.2 in.)

A

1342 mm (52.8 in.)
Slimline Covers

109 mm (4.3 in.)
Universal Front Cover

FRONT

ACOUSTIC COVERS

750 mm
(29.5 in.)

18 mm
(0.7 in.)

211 mm (8.3 in.)
Acoustical Rear Cover

1174 mm
(46.2 in.)

A

1494 mm (58.8 in.)
Acoustical Covers

109 mm (4.3 in.)
Universal Front Cover
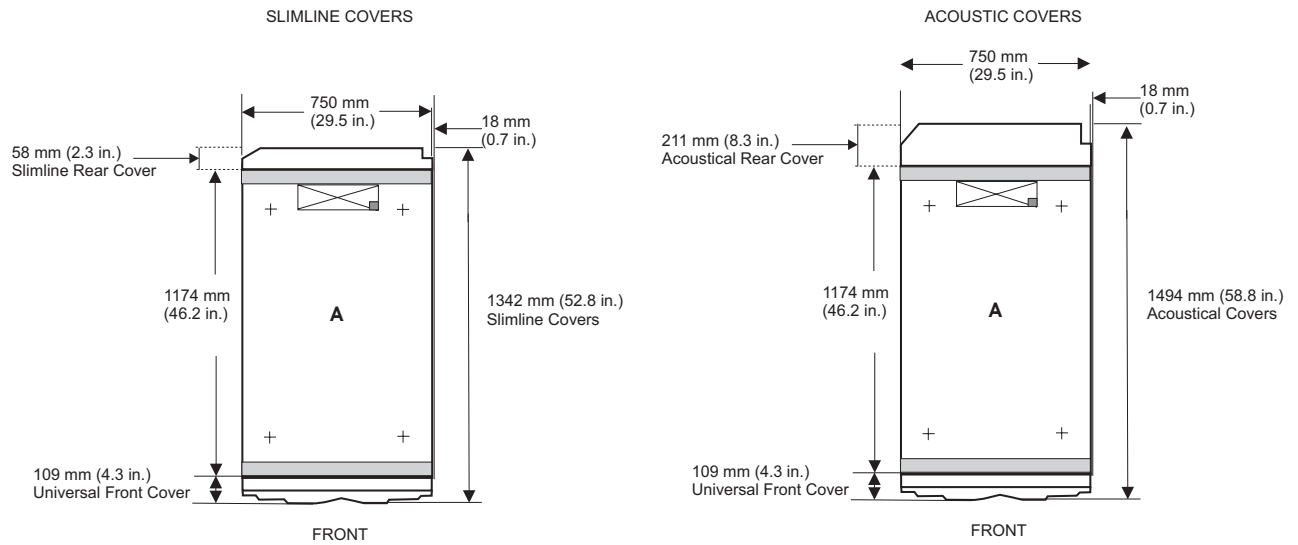
FRONT

FRAME ENTRY/EXIT	DIMENSION	
	(mm)	(in.)
FRONT	117 by 403	4.6 by 15.9
REAR	117 by 403	4.6 by 15.9

A

785 mm
(30.9)

FRONT
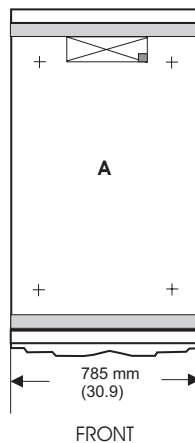
Total System Power Consumption

The following tables contain minimum and maximum power consumption for the 1.1 406/70. Minimum power consumption is based on a configuration consisting of a single 4 GB memory card, 1 PCI card per I/O subsystem, and 1 DASD device per I/O subsystem.

Maximum power consumption is based on a configuration consisting of two 32 GB memory cards per MCM module, maximum PCI cards (20 per I/O drawer), and maximum DASD (16 per I/O drawer).

Power consumption calculations are estimates. Actual values may vary.

Calculate heat load (Btu per hour) by multiplying the power (in watts) for the configuration by a factor of 3.4.

Note: Certain system configurations only support a maximum number of I/O drawers. If a system does not support a particular count of I/O drawers, it is indicated with ″N/A″.

Number of I/O Drawers (7040-61D)	1.1 GHz 4-way Modules (minimum power consumption, in watts)		1.1 GHz 4-way Modules (maximum power consumption, in watts)
1	1835		2966
2	2203		4014
3	2571		5062

Number of I/O Drawers (7040-61D)	1.1 GHz 8-way Modules (minimum power consumption, in watts)			1.1 GHz 8-way Modules (maximum power consumption, in watts)	
	8-way	16-way		8-way	16-way
1	1911	2867		3042	4586
2	2279	3235		4090	5634
3	2647	3603		5138	6682

Number of I/O Drawers (7040-61D)	1.5 GHz 4-way Modules (minimum power consumption, in watts)		1.5 GHz 4-way Modules (maximum power consumption, in watts)
	4-way		4-way
1	1714		2931
2	2082		3979
3	N/A		N/A

Number of I/O Drawers (7040-61D)	1.5 GHz 8-way Modules (minimum power consumption, in watts)			1.5 GHz 8-way Modules (maximum power consumption, in watts)	
	8-way	16-way		8-way	16-way
1	1839	2723		3056	4614
2	2207	3091		4104	5662
3	N/A	3459		N/A	6710

Wattage Addition/Subtraction for Minimum and Maximum Configurations

Minimum configurations are based on a single 4 GB memory card and a single DASD/PCI card in each I/O subsystem. Maximum configurations are based on two 32 GB memory cards per MCM module, sixteen DASD per I/O subsystem and twenty PCI cards per I/O subsystem. To determine the typical power consumption for a specific configuration, use the following typical power values:

- 4 GB memory book - 137 Watts
- 8 GB memory book - 151 Watts
- 16 GB memory book - 235 Watts
- 32 GB memory book - 294 Watts
- Each PCI card - 20 Watts
- DASD - 20 Watts

Service Inspection Guide

Perform a service inspection on the system when:

- The system is inspected for a maintenance agreement.
- Service is requested and service has not recently been performed.
- An alterations and attachments review is performed.
- Changes have been made to the equipment that may affect its safe operation.
- External devices with their own power cables have those cables attached.

If the inspection indicates an unacceptable safety condition, the condition must be corrected before anyone can service the machine.

Note: The owner of the system is responsible to correct any unsafe conditions.

Perform the following checks:

1. Check the covers for sharp edges and for damage or alterations that expose the internal parts of the system.
2. Check the covers for proper fit to the rack. They should be in place and secure.
3. Gently rock the rack from side to side to verify the rack is stable.
4. Turn off the UEPO switch, turn off the circuit breakers on all optional IBF subsystems (if provided), then disconnect both power cords from the customer's receptacle.
5. Remove the covers.
6. Check for alterations or attachments. If there are any, check for obvious safety hazards, such as broken wires, sharp edges, or broken insulation.
7. Check the internal cables for damage.
8. Check for dirt, water, and any other contamination within the system.
9. Check the air filters in the processor subsystem to ensure they are clean. Replace if necessary.
10. Check the voltage label on the back of the system to ensure that it matches the voltage at the outlet.
11. Check the external power cable for damage.
12. With the external power cable connected to the system, check for 0.1 ohm or less resistance between the ground lug on the external power cable plug and the metal frame.
13. Perform the following checks on each device that has its own power cables:
    a. Check for damage to the power cord.
    b. Check for the correct grounded power cable.
    c. With the external power cable connected to the device, check for 0.1 ohm or less resistance between the ground lug on the external power cable plug and the metal frame of the device.
14. Install the covers.

Chapter 2. Diagnostics Overview

406/70 servers use an integrated set of software diagnostic procedures to facilitate system maintenance. This book and the *Diagnostic Information for Multiple Bus Systems* are the basis of the diagnostic procedures for 406/70 systems. In particular, chapters 3, 4, 5, and 10 in this book are important for the trained service representative to understand and use when isolating a failure on the system.

The manufacturer recommends that systems configured with 4 GB of memory or greater have access to a 4-mm or 8-mm tape drive for submission of system dump information if it is required. This function can be accomplished through locally attached or network-attached devices, as appropriate.

Maintenance Analysis Procedures (MAPs)

Maintenance Analysis Procedures (MAPs) guide trained service representatives through the complex multirack 406/70 system. These MAPs are the entry point for all isolation and error-recovery procedures. 406/70 systems use a set of integrated procedures, to which the MAPS are the primary entry point.

The MAPS are as follows:
- Entry MAP
- Quick Entry MAP
- Service Focal Point Procedures
- Power MAP
- Problem Isolation MAP

The Entry Map is the starting point for problem determination. The purpose of this MAP is to quickly point to the appropriate MAP or service reference information either in this book, or in the common book set, which includes the *Diagnostic Information for Multiple Bus Systems* and *PCI Adapter Placement Reference*.

The Quick Entry MAP is a subset of the Entry MAP and helps to save time for some types of problems.

The Power MAP deals with isolation of components and cables to diagnose a power problem. The nature of power problems can be related to powering the system on and off, or power failures that can occur after power is turned on.

The Problem Isolation MAP is used to locate defective components not found by normal diagnostics or error-isolation methods. This MAP provides a systematic method of isolation to the failing item or items.

Checkpoints

406/70 systems use various types of checkpoints, error codes, and SRNs that are referred to throughout this book (primarily in Chapters 3, 4 and 5).

On an HMC-managed system, the checkpoints and error codes displayed on the physical operator panel are also displayed on the HMC virtual terminal associated with the managed system object.

On a system operating as a full system partition, checkpoints and error codes will appear on the physical operator panel from the beginning of the power-on process through the completion of booting AIX.

On a partitioned system, checkpoints and error codes for a partition are displayed on the HMC virtual operator panel associated with that logical partition. Checkpoints and error codes generated by logical partitions are not displayed on the managed system's physical operator panel.

During boot up of a partitioned system, there is a global initialization phase where one of the system processors is in control and initializing all of the system resources. During this phase, Exxx codes will be displayed on both the physical operator panel and the HMC managed-system object. After the global initialization phase completes, ″LPAR...″ is displayed on the physical operator panel and the HMC managed-system object.

Each logical partition also has a partition initialization phase where one of the system processors assigned to that partition is initializing all the resource of that partition. Exxx codes will be displayed on the virtual terminal of the HMC logical partition object during this partition initialization phase.

Codes that may appear in the service processor boot progress log, the operating system error log, the virtual terminal, and the operator panel display are as follows:

Checkpoints Checkpoints display in the operator panel from the time ac power is connected to the system until the operating system login prompt is displayed after a successful operating system boot. These checkpoints have the following forms:

8xxx 8xxx checkpoints are displayed from the time ac power is connected to the system until the OK prompt is displayed by the service processor on the operator panel display. (Several 9xxx checkpoints are displayed just before the OK prompt displays.)

9xxx 9xxx checkpoints are displayed by the service processor after the power-on sequence is initiated. A system processor takes control when 91FF displays on the operator panel display.

Note: Certain checkpoints may remain in the display for long periods of time. A spinning cursor is visible in the upper-right corner of the display during these periods to indicate that system activity is continuing.

Exxx Exxx checkpoints indicate that a system processor is in control and is initializing the system resources. Control is being passed to the operating system when E105 displays on the operator panel display. Location code information may also display on the operator panel during this time.

0xxx and 2xxx 0xxx codes are AIX progress codes and configuration codes. Location codes may also display on the operator panel display during this time.

Note: AIX progress codes will not display when the running operating system is Linux.

Error Codes If a fault is detected, an 8-digit error code is displayed in the operator panel display. A location code may be displayed at the same time on the second line.

SRNs Service request numbers, in the form xxx-xxx or xxx-xxxx, may also be displayed on the operator panel display and be noted in the AIX error log.

Note: If the running operating system is Linux, SRNs will not display in the Linux system error log.

Checkpoints can become error codes if the system fails to advance past the point at which the code is presented. For a list of the checkpoints, see Chapter 4, "Checkpoints", on page 303. Each entry provides a description of the event and the recommended action if the system fails to advance.

SRNs are listed in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.

FRU Isolation

For a list of error codes and recommended actions for each code, see Chapter 5, "Error Code to FRU Index", on page 341. These actions can refer to Chapter 10, "Parts Information", on page 905, Chapter 3, "Maintenance Analysis Procedures (MAPs)", on page 107, or provide informational message and directions. If a replacement part is indicated, direct reference is made to the part name. The respective AIX and physical location codes are listed for each occurrence as required. For a list of location codes, see "AIX and Physical Location Code Reference Tables" on page 54.

Note: AIX location codes are not available when the running operating system is Linux.

To look up part numbers and view component diagrams, see Chapter 10, "Parts Information", on page 905. The beginning of the chapter provides a parts index with the predominant field replaceable units (FRUs) listed by name. The remainder of the chapter provides illustrations of the various assemblies and components that compose 406/70 servers. The illustrations are ordered with processor subsystem components listed first, then I/O subsystem, and then accessories.

FRU Identify LEDs

This system is configured with an arrangement of LEDs that help identify various components of the system. These include, but are not limited to:

- Rack identify LED
- Processor subsystem drawer identify LED
- I/O drawer identify LED
- RIO port identify LED
- FRU identify LED
    - Power subsystem FRUs
    - Processor subsystem FRUs
    - I/O subsystem FRUs
- I/O adapter identify LED
- DASD identify LED

The identify LEDs are arranged hierarchically with the FRU identify LED at the bottom of the hierarchy, followed by the corresponding processor subsystem or I/O drawer identify LED, and the corresponding rack-identify LED to locate the failing FRU more easily.

Any identify LED in the system may be flashed (when the processor subsystem is in the failed state and power is on) by using the service processor LED Control Menu contained in the System Information Menu of the privileged user menus. To use operate the LED Control Menu, see page 699.

Any identify LED in the system can also be flashed by using the Identify and Attention Indicators task in diagnostics. The procedure to use the Identify and Attention Indicators task in diagnostics is outlined in *Diagnostic Information for Multiple Bus Systems*.

If the service processor menus and AIX diagnostics are not available, the FRU identify LEDs can be flashed by one of the following procedures:

- If the system is configured as a full partition, the system may be booted to the open firmware prompt and the command **FRU-LED-MENU** entered. A menu displays that allows you to enable the desired FRU identify LED. See "System Power Control Menu" on page 690 for instructions on setting up the boot mode to enable the boot to the open firmware prompt.
- If the system is logically partitioned, the HMC must be attached. You can use the HMC to enable any FRU identify LED to be flashed. See the *Hardware Management Console Operations Guide* for instructions on activating and deactivating a FRU identify LED.

Running Diagnostics on the Native Serial Port on a Full Machine Partition with an HMC Attached

For a full system partition, the output of the S1 serial port is redirected, or wrapped to the virtual console window. When the S1 serial port is wrapped, the output of any command is directed from the S1 serial port to the virtual console terminal. If you close the virtual console window on the managed system, normal function is restored to the S1 serial port.

The implication of this is that the serial port wrap diagnostics may fail with a false SRN if the virtual console window on the managed system is not closed. Another method to prevent the false SRN is to unplug the HMC from its port before running the wrap tests.

After running diagnostics on the serial port, make sure that the S1 serial port is enabled for login; use the AIX command **chdev -l 'ttyx' -a login='enable'** where x is the tty number corresponding to the S1 serial port.

Chapter 3. Maintenance Analysis Procedures (MAPs)

This chapter contains Maintenance Analysis Procedures (MAPs) for the 406/70.

Entry MAP

When possible, run online diagnostics in service mode. Online diagnostics perform additional functions compared to standalone diagnostics. This ensures that the error state of the system that was captured in NVRAM is available for your use in fixing the problem. The AIX error log and SMIT are only available when diagnostics are run from the hard drive. Always check Service Focal Point for any open service events in Service Action Event log.

Note: Online AIX diagnostics from the hard drive are not available when the running operating system is Linux.

If this system has a Hardware Management Console (HMC) with Service Focal Point (SFP) and you have not previously been directed to MAP 1321, go to "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122. Otherwise, use the following table to help determine your next step.

Notes:
1. Licensed programs frequently rely on system information stored in the VPD module on the media subsystem operator panel. If the MAPs indicate that the media subsystem operator panel should be replaced, swap the VPD module from the old media subsystem operator panel to the new one (see "Operator Panel" on page 902). If the old VPD module has to be replaced, call technical support for recovery instructions. If recovery is not possible, notify the system owner that new keys for licensed programs may be required.
2. If a network adapter is replaced, the network administrator must be notified so that the client IP addresses used by the system can be changed. In addition, the operating system configuration of the network controller may need to be changed in order to enable system startup. Also check to ensure that any client or system that addresses this system is updated.

Note: The various codes that might display on the HMC are all listed as error codes by Service Focal Point (SFP). To assist you in identifying the types of error data in this guide, use the following table.

SFP Name	Number of Digits in Error Code	Error code	Service Guide Name
Error Code	Any	Contains #	Menu Goal
Error Code	Any	Contains - (hyphen)	SRN
Error Code	5	Does not contain # or -	SRN
Error Code	6	Does not contain # or -	Error Code
Error Code	8	Does not contain # or -	Error Code, SRC, or Ref Code

Symptom	Starting Point
You have a problem that does not prevent the system from booting and the media subsystem operator panel is functional.	Go to the Fast Path MAP in the *Diagnostic Information for Multiple Bus Systems*.
You do not have a symptom.	Go to MAP 0020 in the *Diagnostic Information for Multiple Bus Systems*.
You have an SRN.	Go to the Fast Path MAP in the *Diagnostic Information for Multiple Bus Systems*.
The system stops and a 3-digit number is displayed in the operator panel display.	Record SRN 101-xxx, where xxx is the 3-digit number displayed in the operator panel display, then go to the Fast Path MAP in the *Diagnostic Information for Multiple Bus Systems*.
The system stops and a 4-digit number beginning with 0 or 2 is displayed in the operator panel display.	Go to the Fast Path MAP in the *Diagnostic Information for Multiple Bus Systems*.
All other symptoms.	Go to "Quick Entry MAP" on page 109.

Quick Entry MAP

Quick Entry MAP Table of Contents

Problem Description	Page No.
Service actions	110
The system attention LED on the media subsystem operator panel is on.	110
OK does not appear in the media subsystem operator panel display before pressing the power-on button. Other symptoms appear in the media subsystem operator panel display or LEDs before the power-on button is pressed.	110
8-Digit error codes	111
System stops with an 8-digit number displayed	111
System stops with a 4-digit number displayed that does not begin with 0 or 2.	111
System stops with a 3-digit number displayed (see below for 888 sequence).	111
Hardware Management Console (HMC) Problem	111
There appears to be a display problem (distortion, blurring, etc.)	112
Power and cooling problems	113
888 sequence in operator panel display	113
Other symptoms or problems	113

Attention: If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154x by the error code. Otherwise, call for support if the actions for an error code do not resolve the problem.

If you replace FRUs or perform an action, and the problem is corrected, go to "MAP 410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Note: If the only service actions that you perform are on the HMC, do not use MAP 410 to do the repair checkout.

Symptom	Action
Service Actions	
You have an open service event in the service action event log.	Go to "Service Focal Point" on page 4.
You have parts to exchange or a corrective action to perform.	1. Go to Chapter 9, "Removal and Replacement Procedures", on page 743. 2. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.
You need to verify that a part exchange or corrective action corrected the problem.	Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.
You need to verify correct system operation.	Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.
The system attention LED on the media subsystem operator panel is on.	Go to "Disturbance or System Attention LED" on page 21 and perform any actions indicated.
OK does not appear in the media subsystem operator panel display before pressing the power-on button. Other symptoms appear in the media subsystem operator panel display or LEDs before the power on button is pressed.	

A bouncing or scrolling ball remains on the media subsystem operator panel display or the media subsystem operator panel display is filled with dashes	1. Verify the operator panel cable from the primary I/O book to the media subsystem is connected and correctly seated at both ends.
	
	2. If an ASCII terminal is available, connect it to the primary I/O book through serial port 1.
	  a. If the service processor menu is displayed, then:
	    1) Replace the operator panel assembly, location: U1.17-L1. Refer to "Operator Panel" on page 902.
	    2) Replace the primary I/O book, location: U1.18-P1-H2. Refer to "I/O Books and I/O Blanks" on page 761.
	  b. If the service processor menu is not displayed, then:
	    1) Replace the primary I/O book, location: U1.18-P1-H2. Refer to "I/O Books and I/O Blanks" on page 761.
	    2) Replace the operator panel assembly, location: U1.17-L1. Refer to "Operator Panel" on page 902.
	
	3. If an ASCII terminal is not available, replace the following, one at a time, in the sequence listed:
	  a. Operator panel assembly, location: U1.17-L1. Refer to "Operator Panel" on page 902.
	  b. Primary I/O book, location: U1.18-P1-H2. Refer to "I/O Books and I/O Blanks" on page 761.

You have a blank display on the operator panel. Other LEDs on the operator panel appear to behave normally.	1. Check the processor subsystem to media subsystem cable. 2. Replace the operator panel assembly, Location: U1.17-L1. Refer to "Operator Panel" on page 902. 3. Replace the primary I/O book, Location: U1.18-P1-H2. Refer to "I/O Books and I/O Blanks" on page 761.
You have a blank display on the operator panel. Other LEDs on the operator panel are off.	Go to "MAP 1520: Power" on page 139.

Symptom	Action
8-Digit Error Codes	
You have an 8-digit error code displayed	1. Look up the error code in the table in "Checkpoints and Error Codes Index" on page 344. 2. Look up the service action event (SAE) log. If the FRU has been changed other than the one in step 1, look at the most recent one.
System stops with an 8-digit number displayed	
The system stops with an 8-digit error code displayed when booting.	1. Look up the error code in the table in "Checkpoints and Error Codes Index" on page 344. 2. Look up the SAE log. If the FRU has been changed other than the one in step 1, look at the most recent one.
System stops with a 4-digit number displayed that does not begin with 0 or 2.	
The system stops with a 4-digit checkpoint.	Go to "Checkpoints and Error Codes Index" on page 344. If you do not find the error code there, go to the Fast Path MAP in the *Diagnostic Information for Multiple Bus Systems*.
System stops with a 3-digit number displayed (see below for 888 sequence)	
The system stops with a 3-digit error code.	Add 101- to the left of the three digits to create an SRN. Go to *Diagnostic Information for Multiple Bus Systems*. If there is a location code displayed under the 3-digit error code, then look at location to see if it matches failing component that the SRN pointed to. If they do not match, perform the action from *Diagnostic Information for Multiple Bus Systems* first. If the problem still exists, then replace the failing component from that location code.
Hardware Management Console (HMC) Problem	

Symptom	Action
Hardware Management Console (HMC) cannot be used to manage a managed system, or the connection to the managed system is failing.	If the managed system is operating normally (no error codes or other symptoms), the HMC might have a problem, or the connection to the managed system might be damaged or incorrectly cabled. Do the following: 1. Check the connections (serial cable) between the HMC and the managed system. Correct any cabling errors if found. If another serial cable is available, connect it in place of the existing cable and refresh the HMC graphical user interface. You may have to wait up to 30 seconds for the managed system to reconnect. 2. Verify that any connected HMC is connected to the managed system by checking the Management Environment of the HMC. **Note:** The managed system must have power connected and the system running, or waiting for a power-on instruction (the OK prompt is in the operator panel.) If the managed system does not appear in the Navigation area of the HMC Management Environment, then the HMC or the connection to the managed system might be failing. 3. Go to the Entry MAP in the *Hardware Management Console Maintenance Guide*, order number SA23-1273. 4. If you cannot fix the problem using the HMC tests in the *Hardware Management Console Maintenance Guide*, there might be a problem with the primary I/O book; replace the primary I/O book.
Hardware management console (HMC) cannot call out using the attached modem and the customer's telephone line.	If the managed system is operating normally (no error codes or other symptoms), the HMC might have a problem, or the connection to the modem and telephone line may have a problem. Do the following: 1. Check the connections between the HMC and the modem and telephone line. Correct any cabling errors if found. 2. Go to the Entry MAP in the *Hardware Management Console Maintenance Guide*, order number SA23-1273.
There is a Display Problem (Distortion, Blurring, Etc.)	

Symptom	Action

All display problems.	1. If using the Hardware Management Console, go to the *Hardware Management Console Maintenance Guide*, order number SA23-1273.
	
	2. If using a graphics display:
	  a. Go to the problem determination procedures for the display.
	  b. If you do not find a problem, replace the display adapter.
	
	3. If using an ASCII terminal:
	  a. Make sure that the ASCII terminal is connected to S1.
	  b. If problems persist, go to the problem determination procedures for the terminal.
	  c. If you do not find a problem, replace the primary I/O book.

Power and Cooling Problems	
The system will not power on and no error codes are available.	Go to "MAP 1521: The System Will Not Power On And No Error Codes Are Available" on page 143.
The power light does not come on or stay on. (both the operator panel power-on LED and the I/O subsystem indicator panel power LEDs do not come on or stay on).	1. Check service processor error log. 2. Go to "MAP 1520: Power" on page 139.
A rack or a rack-mounted unit will not power on.	1. Check service processor error log. 2. Go to "MAP 1520: Power" on page 139.
You have a power problem.	1. Check service processor error log. 2. Go to "MAP 1520: Power" on page 139.
The system attention LED on the media subsystem operator panel is on and there is no error code displayed.	1. Check service processor error log. 2. Go to "MAP 1520: Power" on page 139.
888 Sequence in Operator Panel Display	
An 888 sequence is displayed in the media subsystem operator panel display.	Go to the Fast Path MAP in the *Diagnostic Information for Multiple Bus Systems*.
Other Symptoms or Problems	
One or more partitions do not boot. You cannot activate one or more partitions.	Go to "MAP 1020: Problem Determination" on page 116.
The operator panel displays `OK` and the fans and blowers are off.	The service processor is ready. The system is waiting for power-on.
All of the system POST indicators are displayed on the system console, the system pauses and then restarts. The term *POST indicators* refers to the device mnemonics (the words `memory`, `keyboard`, `network`, `scsi`, and `speaker`) that appear on the system console during the power-on self-test (POST).	Go to "Boot Problems" on page 338.
The system stops and all of the POST indicators are displayed on the system console. The term *POST indicators* refers to the device mnemonics (the words `memory`, `keyboard`, `network`, `scsi`, and `speaker`) that appear on the system console during the power-on self-test (POST).	Go to "Boot Problems" on page 338.
The system stops and the message `STARTING SOFTWARE PLEASE WAIT...` is displayed on the firmware console.	Go to Chapter 4, "Checkpoints", on page 303.

Symptom	Action
The system does not respond to the password being entered or the system login prompt is displayed when booting in service mode.	1. If the password is being entered from the Hardware Management Console (HMC), go to the *Hardware Management Console Maintenance Guide*.
	2. If the password is being entered from a keyboard attached to the system, then the keyboard or its controller may be faulty. In this case, replace these parts in the following order: a. Keyboard cable b. Keyboard c. USB card the keyboard is attached to.
	3. If the password is being entered from an ASCII terminal, then use the problem determination procedures for the ASCII terminal. Make sure the ASCII terminal is connected to S1.
	If the problem persists, replace the primary I/O book.
No codes are displayed on the operator panel within a few seconds of turning on the system. The operator panel is blank before the system is powered on.	Reseat the operator panel cable. If the problem is not resolved, replace in the following order: 1. Operator panel assembly. Swap the VPD module from the old operator panel to the new operator panel. 2. Primary I/O book. (See notes on page 107.)
The SMS configuration list or boot sequence selection menu shows more SCSI devices attached to a controller/adapter than are actually attached.	A device may be set to use the same SCSI bus ID as the control adapter. Note the ID being used by the controller/adapter (this can be checked and/or changed through an SMS utility), and verify that no device attached to the controller is set to use that ID. If settings do not appear to be in conflict: 1. Go to "MAP 1542: I/O Problem Isolation" on page 261 2. Replace the SCSI cable. 3. Replace the device. 4. Replace the SCSI adapter **Note:** In a ″twin-tailed″ configuration where there is more than one initiator device (normally another system) attached to the SCSI bus, it may be necessary to use SMS utilities to change the ID of the SCSI controller or adapter.

The System Management Services menu is displayed.	The device or media you are attempting to boot from may be faulty.
	1. Check the SMS error log for any errors. To check the error log:
	  • Choose error log
	  • If an error is logged, check the time stamp.
	  • If the error was logged during the current boot attempt, record it.
	  • Look up the error in Chapter 5, "Error Code to FRU Index" and do the listed action.
	  • If no recent error is logged in the error log, continue to the next step below.
	2. Try to boot from an alternate boot device connected to the same controller as the original boot device. If the boot succeeds, replace the original boot device (for removable media devices, try the media first).
	3. Go to "Boot Problems" on page 338.

Symptom	Action
You suspect a cable problem.	Go to *Adapters, Devices, and Cable Information for Multiple Bus Systems*.
All other problems.	Go to "MAP 1020: Problem Determination" on page 116.

MAP 1020: Problem Determination

Purpose of This MAP

Use this MAP to get an error code if you were not provided one by the customer or you are unable to load diagnostics. If you are able to load the diagnostics, go to MAP 0020 in the *Diagnostic Information for Multiple Bus Systems*.

The service processor may have recorded one or more symptoms in its error log. Examine this error log before proceeding (see "System Information Menu" on page 694). The server may have been set up by using the HMC. Check the Service Action Event (SAE) log in the Service Focal Point. The SAE log may have recorded one or more symptoms in the Service Focal Point. To avoid unnecessary replacement of the same FRU for the same problem, it is necessary to check the SAE log for evidence of prior service activity on the same subsystem.

If you find any error codes in the service processor error log or the Service Focal Point, record all error codes and any location codes in the order you find them and process each error code and location code beginning at the Entry MAP. Otherwise, continue with the directions for MAP 1020.

The service processor may have been set by the user to monitor system operations and to attempt recoveries. You can disable these actions while you diagnose and service the system. If the system was set up according to the recommendations of the *406/70*, all the settings of the service processor (except language) were saved by using the SAVE/RESTORE HARDWARE MAINTENANCE POLICIES service aid. You can use the same service aid to restore the settings at the conclusion of your service action.

In case the service processor settings were not saved by the user, if you disable them, make notes of their current settings for restoration before you leave.

In addition to the parameters in the following table, you can disconnect the modem to prevent incoming signals that could cause the system to power on.

Following are the service processor settings. The service processor menus are described in Chapter 7, "Using the Service Processor", on page 679.

Surveillance	From the service processor Setup Menu, go to the Surveillance Setup Menu and disable surveillance. (Surveillance is automatically disabled in LPAR mode.)
Unattended Start	From the service processor System Power Control Menu, disable unattended start mode.
Reboot Policy	From the System Power Control Menu, go to the Reboot/Restart Policy Setup Menu and set: 1. Number of reboot attempts to **0** (zero) 2. Use OS-Defined restart policy to **No** 3. Enable supplemental restart policy to **No**.
Call Out	From the Call-In/Call-Out Setup Menu, go to the Serial Port Selection Menu and disable call-out on both serial ports. (Call-out is automatically disabled when the system is booted to operate with multiple partitions (also known as a *partitioned system*).

Be prepared to record code numbers and use those numbers in the course of analyzing a problem. Go to "Step 1020-1".

Step 1020-1
The following steps analyze a failure to load the diagnostic programs.

Note: Be prepared to answer questions regarding the operator panel display and to perform certain actions based on displayed POST indicators.

1. Run diagnostics on any partition. Find your symptom in the following table; then follow the instructions given in the Action column.

   If no fault is identified, continue to the next step.

2. Run diagnostics on the failing partition. Find your symptom in the following table; then follow the instructions given in the Action column.

   If no fault is identified, continue to the next step.

3. Power off the system. Refer to "Powering Off and Powering On the System" on page 747.

4. Load the standalone diagnostics in service mode to test the full system partition. Refer to Chapter 6, "Using the Online and Standalone Diagnostics", on page 669.

5. Wait until the diagnostics are loaded or the system appears to stop. If you receive an error code or if the system stops before diagnostics are loaded, find your symptom in the following table; then follow the instructions given in the Action column.

   If no fault is identified, continue to the next step.

6. Run the standalone diagnostics on the entire system. Find your symptom in the following table; then follow the instructions given in the Action column.

   If no fault is identified, call service support for assistance.

Symptom	Action
One or more partitions do not boot.	1. Check service processor error log. If an error is indicated, go to the "Entry MAP" on page 107. 2. Check the Serviceable Action Event (SAE) log, refer to "Working With Serviceable Events" on page 7. If there is a Service Action Event, perform the recommended actions or go to the "Entry MAP" on page 107.
The system stopped and a code is displayed on the operator panel.	Go to the "Entry MAP" on page 107.
The system stops with a prompt to enter a password.	Enter the password. You cannot continue until a correct password has been entered. When you have entered a valid password, go to the beginning of this table and wait for one of the other conditions to occur.
The diagnostic operating instructions are displayed.	Go to MAP 0020 in the *Diagnostic Information for Multiple Bus Systems*.
The power good LED does not come on or does not stay on, or you have a power problem.	Go to "MAP 1520: Power" on page 139.
The system login prompt is displayed.	You may not have pressed the correct key or you may not have pressed the key soon enough when you were to trying to indicate a service mode IPL of the diagnostic programs. If this is the case, start again at the beginning of this step. **Note:** Perform the system shutdown procedure before turning off the system. If you are sure you pressed the correct key in a timely manner, go to "Step 1020-2" on page 119.
The system does not respond when the password is entered.	Go to "Step 1020-2" on page 119.

Symptom	Action

The system stopped. A POST indicator is displayed on the system console and an eight-digit error code is not displayed.	If the POST indicator represents:
	
	1. Memory, do a slow boot. If an error code points to memory, replace that memory book and run slow boot again.
	
	2. Keyboard
	   a. Replace the keyboard cable.
	   b. Replace the keyboard.
	   c. Replace the USB card that the keyboard is attached to.
	   d. Go to "MAP 1542: I/O Problem Isolation" on page 261.
	
	3. Network, go to "MAP 1542: I/O Problem Isolation" on page 261.
	
	4. SCSI, go to "MAP 1542: I/O Problem Isolation" on page 261.
	
	5. Speaker
	   a. Replace the operator panel.
	   b. Replace the primary I/O book, location: U1.18-P1-H2.
	   c. Go to "MAP 1542: I/O Problem Isolation" on page 261.

The System Management Services menu is displayed.	Go to "Step 1020-4" on page 120.
All other symptoms.	If you were directed here from the Entry MAP, go to "MAP 1542: I/O Problem Isolation" on page 261. Otherwise, find the symptom in the "Entry MAP" on page 107.

Step 1020-2

There is a problem with the keyboard.

Find the type of keyboard you are using in the following table; then follow the instructions given in the Action column.

Keyboard Type	Action
Type 101 keyboard (U.S.). Identified by the size of the Enter key. The Enter key is in only one horizontal row of keys.	Record error code M0KB D001; then go to "Step 1020-3".
Type 102 keyboard (W.T.). Identified by the size of the Enter key. The Enter key extends into two horizontal rows.	Record error code M0KB D002; then go to "Step 1020-3".
Type 106 keyboard. (Identified by the Japanese characters.)	Record error code M0KB D003; then go to "Step 1020-3".
ASCII terminal keyboard	Go to the documentation for this type of ASCII terminal and continue with problem determination.

Step 1020-3

Take the following actions:

1. Find the eight-digit error code in Chapter 5, "Error Code to FRU Index", on page 341.

   Note: If the eight-digit error code is not listed in Chapter 5, "Error Code to FRU Index", look for it in the following:

   - Any supplemental service manuals for attached devices
   - The diagnostic problem report screen for additional information
   - The Service Hints service aid
   - The CEREADME file (by using the Service Hints service aid)

   Note: Service aids can be found in *Diagnostic Information for Multiple Bus Systems*.

2. Perform the action listed.

Step 1020-4

1. Turn off, then turn on the system unit.

2. When the keyboard indicator (the word **keyboard**) displays, press the 1 key on a directly attached keyboard or the 1 key on an ASCII terminal or 1 key on the HMC.

3. When the System Management Services menus appear, check the error log for any errors.

   a. Choose Error Log

   b. If an error is logged, check the time stamp.

   c. If the error was logged during the current boot attempt, record it.

   d. Look up the error in the Chapter 5, "Error Code to FRU Index", on page 341 and do the listed action.

   e. If no recent error is logged in the error log, go to "MAP 1542: I/O Problem Isolation" on page 261.

MAP 1320: Service Focal Point Procedures

These procedures define the steps to be taken when servicing a machine equipped with Service Focal Point (SFP).

Note: The various codes that might display on the HMC are all listed as error codes by Service Focal Point (SFP). To assist you in identifying the types of error data in this guide, use the following table.

Number of Digits in Error Code	Error code	Service Guide Name
Any	Contains # (pound sign)	Menu Goal
Any	Contains - (hyphen)	SRN
5	Does not contain # or -	SRN
6	Does not contain # or -	Error Code
8	Does not contain # or -	Error Code, Service Reference Code (SRC)

For steps to be taken when beginning service on a machine with SFP, see the "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122.

For steps to be taken after service is complete on a machine with SFP, see the "MAP 1322: End of Call MAP for Systems with Service Focal Point" on page 130.

MAP 1321: Quick Entry MAP for Systems with Service Focal Point

Notes:

1. In this MAP, the term *service action event* is synonymous with *serviceable event*.

2. Steps in this MAP may ask you to open the details of the service action event and obtain error codes and FRU location codes. Depending on the error code(s), this operation may involve looking at service processor error code details. Be sure you select all listed error codes one at a time and select details to display all error codes and location codes for the serviceable event that you are working with.

Step 1321-1

For future reference, record the error code and the location code (that brought you to this MAP) of the FRU to be replaced. Record any other symptoms if an error code is not available.

Does the system have an HMC attached?

No Go to "Step 1321-23" on page 125.

Yes Go to "Step 1321-2".

Step 1321-2

At the HMC console, start Service Focal Point (SFP) and examine the service action event log for any open service action events. For SFP operating instructions, see "Service Focal Point" on page 4.

Does the HMC appear to operate correctly?

No Go to "Quick Entry MAP" on page 109, look up the HMC symptom, and follow the directions there.

Yes Go to "Step 1321-3".

Step 1321-3

Are there any service action events that are open?

No Go to "Step 1321-40" on page 129.

Yes Go to "Step 1321-4".

Step 1321-4

Record the list of open service action events.

Step 1321-5

From the list of serviceable events recorded in "Step 1321-4", open the details of each service action event and examine the FRU list and error code(s) for each.

Step 1321-6

Are there any serviceable actions events with error codes of the form #xxxxxx in the list of error codes found in "Step 1321-5"?

No Go to "Step 1321-7".

Yes Go to "Step 1321-18" on page 124.

Step 1321-7

Are there any serviceable events with FRU location codes reported in "Step 1321-5"?

No Go to "Step 1321-14" on page 123.

Yes Go to "Step 1321-8" on page 123.

Step 1321-8

From the list of open service action events with FRUs reported, examine the details of each service action event and record the error code.

Step 1321-9

Examine the list of error codes you obtained from "Step 1321-8" and look for any of the form 4xxB xxxx, A0D-34x, or A1D-34x.

Step 1321-10

Are there any error codes from "Step 1321-8" of the form 4xxB xxxx, A0D-34x, or A1D-34x?

No   Go to "Step 1321-13".

Yes   Go to "Step 1321-11".

Step 1321-11

Do any of the error codes from "Step 1321-8" of the form 4xxB xxxx, A0D-34x, or A1D-34x have the same first two characters on the left as the first two characters on the left of the error code recorded in "Step 1321-1" on page 122 that sent you to this MAP?

No   Go to "Step 1321-13".

Yes   Record the error codes from "Step 1321-8" of the form 4xxB xxxx, A0D-34x, or A1D-34x that have the same first two characters on the left as the first two characters on the left of the error code recorded in "Step 1321-1" on page 122 that sent you to this MAP. Also, record the service action event associated with each error code. Go to "Step 1321-12".

Step 1321-12

From the list of open service action events with error codes of the form 4xxB xxxx, A0D-34x, or A1D-34x recorded in "Step 1321-11", choose the service action event with the earliest time stamp (the one that occurred first), record its error code and FRU location(s), and proceed to "Step 1321-14" with this new code.

When future steps refer to the error code recorded in "Step 1321-1" on page 122, use this new error code and its location code(s) instead of the original error code that sent you to this MAP.

Step 1321-13

From the list of open service action events with FRUs reported, choose the service action event with the earliest time stamp (the one that occurred first), record its error code and FRU location(s), and proceed to "Step 1321-14" with this new error code. When future steps refer to the error code recorded in "Step 1321-1" on page 122, use this new error code and its location code(s) instead of the original error code that sent you to this MAP.

Step 1321-14

At the HMC console, open Service Focal Point (SFP) and examine the service action event log for any closed service action events. For SFP operating instructions, refer to "Service Focal Point" on page 4.

Step 1321-15

Are there any service action events that are closed?

No   Go to the table in "Entry MAP" on page 107.

Yes   Go to "Step 1321-16" on page 124.

Step 1321-16

Examine the details of the ten most-recently closed service action events.

Are there any error codes or symptoms in the ten latest closed service action events that are the same as the error code or symptom recorded in "Step 1321-1" on page 122?

No Go to the table in "Entry MAP" on page 107.

Yes Go to "Step 1321-17".

Step 1321-17

Examine the FRUs of the same error codes or symptoms.

Are there any FRUs in the same error codes or symptoms of the closed service action events left to be replaced?

No Go to the table in "Entry MAP" on page 107.

Yes Replace the next FRU of same error codes or symptoms of the closed service action events. Go to ″MAP 0410: Repair Checkout″ in *Diagnostic Information for Multiple Bus Systems*.

Step 1321-18

From the list of serviceable events with error code(s) of the form #xxxxxx, examine the details of each serviceable event to display the description field of the error code(s) of the form #xxxxxx.

Step 1321-19

Double click on the description field to view the complete text.

Step 1321-20

Perform any actions that may be listed in the descriptions of all error codes of the form #xxxxxx before proceeding.

Step 1321-21

Did you find a problem?

No Go to "Step 1321-7" on page 122.

Yes Go to ″MAP 0410: Repair Checkout″ in *Diagnostic Information for Multiple Bus Systems*.

Step 1321-22

Look for and record any additional error information or software messages on the operator panel or the console (serial TTY, Vterm, or HMC console). Choose a running Linux partition (preferably the partition with the problem).

Step 1321-23

Is Linux functional in any partition with Linux installed?

No   Go to "Step 1321-30" on page 127.

Yes   Go to "Step 1321-24".

Attention: "Step 1321-24" through "Step 1321-36" on page 128 must be performed on a partition running the Linux operating system.

Step 1321-24

If your system is functional, do the following:

Examine the Linux system log by logging in to the system as the root user and entering the following command:

```
cat /var/log/messages |grep RTAS |more
```

Linux run-time error messages are logged in the **messages** file under **/var/log**. The following is an example of the Linux system error log.

Aug 27 18:13:41 rasler kernel: RTAS: -------- event-scan begin --------
Aug 27 18:13:41 rasler kernel: RTAS: Location Code: U0.1-P1-C1
Aug 27 18:13:41 rasler kernel: RTAS: WARNING: (FULLY RECOVERED) type: INTERN_DEV_FAIL
Aug 27 18:13:41 rasler kernel: RTAS: initiator: UNKNOWN target: UNKNOWN
Aug 27 18:13:41 rasler kernel: RTAS: Status: predictive new
Aug 27 18:13:41 rasler kernel: RTAS: Date/Time: 20020827 18134000
Aug 27 18:13:41 rasler kernel: RTAS: CPU Failure
Aug 27 18:13:41 rasler kernel: RTAS: CPU id: 0
Aug 27 18:13:41 rasler kernel: RTAS: Failing element: 0x0000
Aug 27 18:13:41 rasler kernel: RTAS: A reboot of the system may correct the problem
Aug 27 18:13:41 rasler kernel: RTAS: -------- event-scan end ----------

Step 1321-25

Record any RTAS messages found in the Linux system log in Step 1321-24. Ignore all other messages in the Linux system log. If the system is configured with more than one logical partition with Linux installed, repeat "Step 1321-24" and "Step 1321-25" for all logical partitions that have Linux installed.

Step 1321-26

Examine the Linux boot (IPL) log by logging in to the system as the root user and entering the following command:

```
cat /var/log/boot.msg |grep RTAS |more
```

Linux boot (IPL) error messages are logged into the **boot.msg** file under **/var/log**. The following is an example of the Linux boot error log.

```
RTAS daemon started
RTAS: -------- event-scan begin --------
RTAS: Location Code: U0.1-F3
RTAS: WARNING: (FULLY RECOVERED) type: SENSOR
RTAS: initiator: UNKNOWN target: UNKNOWN
RTAS: Status: bypassed new
RTAS: Date/Time: 20020830 14404000
RTAS: Environment and Power Warning
RTAS: EPOW Sensor Value: 0x00000001
RTAS: EPOW caused by fan failure
RTAS: -------- event-scan end ----------
```

Step 1321-27

Record any RTAS messages found in the Linux boot (IPL) log in Step 1321-26. Ignore all other messages in the Linux boot (IPL) log. If the system is configured with more than one logical partition with Linux installed, repeat "Step 1321-26" and "Step 1321-27" for all logical partitions that have Linux installed.

Step 1321-28

Examine the extended data in both logs.

The following is an example of the Linux extended data.

```
<3>RTAS daemon started
<3>RTAS: -------- event-scan begin --------
<3>RTAS: Location Code: U0.1-P1-C2
<4>RTAS: Log Debug: 04
4b2726fb04a00011702c0014000000000000000000000000f1800001001801d3ffffffff010000000000000042343138
20202020383030343236464238454134303030303 030303030303030
<4>RTAS: Log Debug: D2
5046413405020d0a0000010002714001000000033434d5020444154410000010000000000000010000f180000153595
32044415441000000000000000020021627150105092002162715010509200206371501050953524320444154417 0
2c00140000000000000000020018820201d382000000000000000000000000000000000000000000000000000000000000
00000000000000000000000000000000000000000000000000000000280048ea4000000000000000000000
0000000000000000000004350542044415441702cff08000000001c000000702cf0080000000080000000702cf10070
2cf200702c0004000000800702c01040bf2002e702c02040c1fffbf702c0300702c1000702c11040bf2002e702c12040
c1fffbf702c1300702ca000702ca1080000000000000a03c702ca208000000000000effc702cb000702cb10800000000
0000a03c702cb208000000000000effc702cc000702cc108000000000000a03c702cc208000000000000effc702c3
000702c3108000000000000003702c3208000000000000007b702c8000702c81080000000020e27a39702c820800
000000fffeffff702cd000702cd10800000000010004010702cd2080000000007777f3ffffffffffffffffffffffffffffffffff
ffffffffffffffffffffffff
<3>RTAS: WARNING: (FULLY RECOVERED) type: INTERN_DEV_FAIL
<3>RTAS: initiator: UNKNOWN target: UNKNOWN
<3>RTAS: Status: unrecoverable new
<3>RTAS: Date/Time: 20020905 15372200
<3>RTAS: CPU Failure
<3>RTAS: Internal error (not cache)
<3>RTAS: CPU id: 0
<3>RTAS: Failing element: 0x0000
<3>RTAS: -------- event-scan end ---------
```

Step 1321-29

Record any extended data found in the Linux system log in Step 1321-24 or the Linux boot (IPL) log in Step 1321-26. Be sure to record word 13.

Note: The line(s) in the Linux extended data that begin with ″<4>RTAS: Log Debug: 04″ contain the error code listed in the next 8 hex characters. In the example above, ″4b27 26fb″ is an error code. The error code is also known as word 11. Each 4 bytes after the error code in the Linux extended data is another word (for example, ″04a0 0011″ is word 12, and ″702c 0014″ is word 13, and so on).

If the system is configured with more than one logical partition with Linux installed, repeat "Step 1321-28" on page 126 and "Step 1321-29" for all logical partitions that have Linux installed.

Step 1321-30

Were any error codes or checkpoints recorded in Steps 1321-1, 1321-22, 1321-25, 1321-27, or 1321-29?

No   Go to "Step 1321-31".

Yes   Go to the "Quick Entry MAP" on page 109 with each recorded error code or symptom. Perform the indicated actions one at a time for each error code until the problem has been corrected. If all recorded error codes have been processed and the problem has not been corrected, go to "Step 1321-31".

Step 1321-31

If no additional error information is available and the problem has not been corrected, shut down the system.

If an HMC is not attached, you need a laptop computer (and cable, part number 62H4857) capable of connecting to serial port 1 on the processor subsystem.

Note: The Linux login prompt cannot be seen on a laptop computer connected to serial port 1.

1. If there is no HMC, attach the laptop computer and cable to serial port 1 on the processor subsystem.
2. When OK displays in the operator panel, press a key on the virtual terminal on the laptop computer. The service processor menus are available on the attached laptop computer or on the HMC.
3. Examine the service processor (SP) error log. Record all error codes and messages written to the SP error log. Go to "Step 1321-32".
4. If the service processor menus are not available, go to "Step 1321-33".

Step 1321-32

Boot the system to the system management services (SMS) menus. Record all error codes and messages written to the SMS error log.

Step 1321-33

Were any error codes recorded in steps 1321-31 or 1321-32?

No   Go to "Step 1321-41" on page 129.

Yes   Go to the "Quick Entry MAP" on page 109 with each error code or symptom you have recorded. Perform the indicated actions, one at a time, until the problem has been corrected. If all recorded error codes have been processed and the problem has not been corrected, go to "Step 1321-41" on page 129.

Step 1321-34

Reboot the system and and bring all partitions to the login prompt. If Linux is not available in all partitions, go to "Step 1321-38".

Step 1321-35

Use the **lscfg** command to list all resources assigned to all partitions. Record the adapter and the partition for each resource.

Step 1321-36

To determine if any device(s) or adapter(s) are missing, compare the list of found resources and partition assignments to the customer's known configuration. Record the location of any missing devices.

You may also compare this list of found resources to a prior version of the device tree as follows:

Note: Every time that the partition is booted, the update-device-tree command is run and the device tree is stored in the /var/lib/lsvpd/ directory in a file with the file name device-tree-YYYY-MM-DD-HH:MM:SS, where YYYY is the year, MM is the month, DD is the day, and HH, MM, and SS are the hour, minute and second, respectively, of the date of creation.

- At the command line, enter the following:
  ```
  cd /var/lib/lsvpd/
  ```
- At the command line, enter the following:
  ```
  lscfg -vpd device-tree-2003-03-31-12:26:31.
  ```
  This displays the device tree created on 03/31/2003 at 12:26:31.

If the system is configured with more than one logical partition with Linux installed, repeat "Step 1321-35" and "Step 1321-36" for all logical partitions that have Linux installed.

Step 1321-37

Was the location of one and only one device recorded in "Step 1321-36"?

No   If you previously answered Yes to "Step 1321-37", return the system to its original configuration. This ends the procedure. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

   If you did not previously answer Yes to "Step 1321-37", go to "Step 1321-38".

Yes Perform the following steps one at a time. Power off the system before performing each step. After performing each step, power on the system and go to "Step 1321-34".

1. Check all connections from the system to the device.
2. Replace the device (tape, DASD, etc.)
3. If applicable, replace the device backplane.
4. Replace the device cable.
5. Replace the adapter.
6. If the adapter resides in an I/O drawer, replace the I/O backplane.
7. If the device adapter resides in the CEC, replace the I/O riser card, or the CEC backplane where the device adapter is located.
8. Call service support. Do not go to "Step 1321-34".

Step 1321-38

Does the system appear to stop or hang before reaching the login prompt or did you record any missing resources in "Step 1321-36"?

No   Go to "Step 1321-39" on page 129.

Yes There may be a problem with an I/O device. Go to "MAP 1542: I/O Problem Isolation" on page 261. In MAP 1542, when instructed to boot the system, boot a full system partition.

Step 1321-39

Boot the AIX standalone diagnostics, and run diagnostics in problem determination mode on all resources. Be sure to boot a full system partition. Ensure that AIX diagnostics was run on all known resources. You may need to select each resource individually and run diagnostics on each resource one at a time. Check to make sure that AIX diagnostics was run on all known resources. You may need to select each resource individually and run diagnostics on each resource one at a time.

Did AIX standalone diagnostics find a problem?

No Go to "Step 1321-43".

Yes Go to the table in "Entry MAP" on page 107 with each error code or SRN you have recorded. Until the problem has been corrected, perform the indicated actions, one at a time, for each SRN or error code not already processed in "Step 1321-37" on page 128. If all recorded SRNs or error codes have been processed and the problem has not been corrected, go to "Step 1321-43".

Step 1321-40

Does the system have Linux installed on one or more partitions?

No Go to "Step 1321-14" on page 123.

Yes Go to "Step 1321-22" on page 124.

Step 1321-41

Were any location codes recorded in Steps 1321-1, 1321-22, 1321-25, 1321-27, 1321-29, 1321-31, or 1321-32?

No Go to "Step 1321-34" on page 128.

Yes Replace, one at a time, all parts whose location code was recorded in Steps 1321-1, 1321-22, 1321-25, 1321-27, 1321-29, 1321-31, and 1321-32 that have not been replaced. Power off the system before replacing a part. After replacing the part, power on the system to check if the problem has been corrected. Go to "Step 1321-42" when the problem has been corrected, or all parts in the location codes list have been replaced.

Step 1321-42

Was the problem corrected in Step 1321-41?

No Go to "Step 1321-34" on page 128.

Yes Return the system to its original configuration. This ends the procedure. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1321-43

Were any other symptoms recorded in step 1321-1?

No Call support.

Yes Go to the "Quick Entry MAP" on page 109 with each symptom you have recorded. Perform the indicated actions for all recorded symptoms, one at a time, until the problem has been corrected. If all recorded symptoms have been processed and the problem has not been corrected, call support.

MAP 1322: End of Call MAP for Systems with Service Focal Point

Step 1322-1

For future reference, record the SRC or symptom and the location code of the FRU you replaced.

Step 1322-2

For Service Focal Point operating instructions, refer to "Service Focal Point" on page 4. At the HMC console, open Service Focal Point and examine the service action event log for any open service action events.

Step 1322-3

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 as described in "Resetting the LED when a System is Attached To an HMC" on page 22. This completes the repair, return the system to the customer.

Yes   Go to "Step 1322-4".

Step 1322-4

Record the list of open service action events.

Step 1322-5

From the list of serviceable events recorded in "Step 1322-4", perform "Step 1322-6" through "Step 1322-33" on page 133 for each open service action event.

Step 1322-6

Determine the error class of the serviceable event. Record for future use.

Step 1322-7

Examine the details of the open service action event.

Is the error code associated with this service action event the same as recorded in ″Step 1322-1″?

No   Go to "Step 1322-8".

Yes   Go to "Step 1322-11" on page 131.

Step 1322-8

Examine the FRU list of the service action event.

Are there any FRUs listed for the service action event?

No   Go to "Step 1321-11" on page 123.

Yes   Go to "Step 1321-9" on page 123.

Step 1322-9

Is the FRU list identical (same FRUs, same number of FRUs, and same order of FRUs) to the FRU list of the error code recorded in "Step 1322-1" on page 130?

No   Go to "Step 1322-10".

Yes   Go to "Step 1322-11".

Step 1322-10

The FRU list is different.

Is the FRU you replaced and recorded in "Step 1322-1" on page 130 in the list of FRUs for this service action event?

No   Go to "Step 1322-33" on page 133.

>   **Note:** There are service action events that will remain open when you leave this MAP. Further service actions may be required to complete the repair.

Yes   Go to "Step 1322-11".

Step 1322-11

Examine the details of this service action event, and record the partition(s) involved in this service action event for use in a later step.

Step 1322-12

Is the error code associated with this service action event of the form A11-xxx or A01-xxx?

No   Go to "Step 1322-17" on page 132.

Yes   Go to "Step 1322-13".

Step 1322-13

Have you begun a list of "Axx" partitions from prior service action events that you processed in this MAP?

No   Go to "Step 1322-14".

Yes   Go to "Step 1322-15".

Step 1322-14

Begin a new list of "Axx" partitions by copying the list of partitions obtained in "Step 1322-11". Go to "Step 1322-16" on page 132.

Step 1322-15

Add the partition list obtained in "Step 1322-11" to the existing list of "Axx" partitions obtained from processing previous service action events in this MAP.

Step 1322-16

Remove all entries in the list of all partition(s) you recorded in "Step 1322-11" on page 131. If you are referred to the list of partition(s) obtained in "Step 1322-11" on page 131 in future steps, the list is empty. Go to "Step 1322-17".

Step 1322-17

Select and highlight the service action event from the "Error Associated With This Serviceable Event" window.

Step 1322-18

Select the **Close Event** button.

Step 1322-19

Add comments for the serviceable event. Include any unique additional information. Select the **OK** button.

Step 1322-20

The following steps will add or update FRU information.

Step 1322-21

Did you replace, add, or modify a FRU of the open service action event?

No   Go to "Step 1322-23".

Yes   Go to "Step 1322-22".

Step 1322-22

From the FRU list, select a FRU that you need to update. Double-click on the FRU and update the FRU information. Go to "Step 1322-24".

Step 1322-23

Select the **No FRU Replaced for this Serviceable Event** option.

Step 1322-24

Select **OK** to close the service action event.

Step 1322-25

Is the list of all partition(s) you recorded in "Step 1322-11" on page 131 empty?

No   Go to "Step 1322-26".

Yes   Go to "Step 1322-33" on page 133.

Step 1322-26

Does the list of all partition(s) you recorded in "Step 1322-11" on page 131 contain more than one entry?

No   Go to "Step 1322-33" on page 133.

Yes   Go to "Step 1322-27" on page 133.

Step 1322-27

Is the error class recorded in "Step 1322-6" on page 130 AIX?

No   Go to "Step 1322-33".

Yes   Go to "Step 1322-28".

Step 1322-28

Perform the following steps for each entry in the list of all partition(s) you recorded in "Step 1322-11" on page 131, except the partition you were using to debug the original problem.

Step 1322-29

From the HMC virtual terminal window of a partition in the list of all partitions, type `diag` at the AIX command prompt.

Step 1322-30

1. When the diagnostic operating instructions are displayed, press Enter.
2. Select the **Task Selection** option.

   Note: If the terminal type is not defined, you are prompted to define it before you can proceed.
3. Select the **Log Repair** option.
4. Select the resource associated with the repair action. If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your repair action is not displayed on the Resource List, select `sysplanar0`.
5. Click **commit** after you have made your selection.

Step 1322-31

Exit from diagnostics in this partition and return to the AIX prompt.

Step 1322-32

Have all the partitions in the list of all partition(s) you recorded in "Step 1322-11" on page 131 been processed?

No   Go to "Step 1322-28" to process the next partition in the list you recorded in "Step 1322-11" on page 131.

Yes   Go to "Step 1322-33".

Step 1322-33

Have all the serviceable events recorded in "Step 1322-4" on page 130 been processed?

No   Go to "Step 1322-5" on page 130 and process the next service action event in the list of serviceable events recorded in "Step 1322-4" on page 130.

Yes   Go to "Step 1322-34" on page 134.

Step 1322-34

While processing all service action events, were you directed to "Step 1322-14" on page 131?

No If the system attention LED is still on, use the HMC to turn off the LED as described in "Resetting the LED when a System is Attached To an HMC" on page 22. This completes the repair, return the system to the customer.

> **Note:** If during the processing of the list of open service action events, some service actions events were left open, further service actions may be required to complete the repair.

Yes Go to "Step 1322-35".

Step 1322-35

Perform the following steps for each entry in the list of "Axx" partitions you began recording in "Step 1322-14" on page 131, except the partition you were using to debug the original problem.

Step 1322-36

From the HMC virtual terminal window of a partition in the list of "Axx" partitions, type `diag` at the AIX command prompt.

Step 1322-37

1. When the diagnostic operating instructions are displayed, press Enter.
2. Select the **Task Selection** option.

> **Note:** If the terminal type is not defined, you are prompted to define it before you can proceed.

3. Select the **Log Repair** option.
4. Select the resource associated with the repair action. If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your repair action is not displayed on the Resource List, select `sysplanar0`.
5. Click **commit** after you have made your selection.

Step 1322-38

Exit from diagnostics in this partition and return to the AIX prompt.

Step 1322-39

Have all the partitions in the list of "Axx" partitions(s) you began recording in "Step 1322-14" on page 131 been processed?

No Go to "Step 1322-35" to process the next partition in the list you recorded in "Step 1322-14" on page 131.

Yes If the system attention LED is still on, use the HMC to turn off the LED as described in "Resetting the LED when a System is Attached To an HMC" on page 22. This completes the repair, return the system to the customer.

> **Note:** If during the processing of the list of open service action events, some service actions events were left open, further service actions may be required to complete the repair.

MAP 1420: Recovery Procedures for Hot-Pluggable PCI Adapters

This procedure is used to locate problems that might occur when performing a PCI adapter hot-plug operation.

Find the symptom in the following table; then follow the instructions given in the Action column.

Recovery Procedures for Hot-Pluggable PCI Adapters	
Symptom/Reference Code	Action
Partition will not boot rendering PCI hot-plug manager useless.	Go to "MAP 1421: Partition Will Not Boot Due to Faulty Adapter".
Partition boots, but PCI adapter is not recognized and slot status is empty.	Go to "MAP 1422: Slot is Empty Even When Populated" on page 136.

MAP 1421: Partition Will Not Boot Due to Faulty Adapter

Step 1421-1
The entire system must be shut down and powered off to repair.

Does the customer wish to restore the partition by isolating the faulty adapter without powering off the entire system?

NO   Go to "Step 1421-12" on page 136.

YES   Go to "Step 1421-2".

Step 1421-2
At the HMC, view the resources assigned to the partition that will not boot.

Step 1421-3
Remove the faulty resource from the partition that will not boot. Record the slot location and the adapter type.

Step 1421-4
Attempt to boot the partition.

Does the partition boot?

NO   Go to "Step 1421-12" on page 136.

YES   Go to "Step 1421-5".

Step 1421-5
Shut down the partition.

Step 1421-6

Is the PCI slot power LED of the location recorded in "Step 1421-3" on page 135 on?

NO   Go to "Step 1421-7".

YES   Go to "Step 1421-12".

Step 1421-7

Are there any empty PCI slots attached to the system that are not assigned to any partitions?

NO   Go to "Step 1421-12".

YES   Go to "Step 1421-8".

Step 1421-8

Assign the available empty and unassigned slot to the partition that will not boot.

Step 1421-9

Insert a new adapter of the same type recorded in "Step 1421-3" on page 135 into the slot assigned in "Step 1421-8".

Step 1421-10

Move any external cabling from the adapter in the slot recorded in "Step 1421-3" on page 135 to the adapter in the slot assigned in "Step 1421-8".

Step 1421-11

Attempt to boot the partition.

Does the partition boot?

NO   Go to "Step 1421-12".

YES   Partition and all resources are operational. Schedule repair for the slot recorded in "Step 1421-3" on page 135 with the customer. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure**.

Step 1421-12

Cannot isolate the adapter without powering off the entire system. Schedule repair for the slot recorded in "Step 1421-3" on page 135 with the customer. **This ends the procedure**.

MAP 1422: Slot is Empty Even When Populated

Step 1422-1

Record the I/O drawer and slot location of the slot that is populated with an adapter but shows empty in the PCI hot-plug manager. Also record the adapter type.

Step 1422-2
Is the PCI slot power LED of the location recorded in "Step 1422-1" on page 136 on?

NO   Go to "Step 1422-3".

YES   Go to "Step 1422-7".

Step 1422-3
Disconnect any external cables from the adapter identified in "Step 1422-1" on page 136.

Step 1422-4
Remove the adapter identified in "Step 1422-1" on page 136.

Step 1422-5
Follow the procedure "Installing a Hot-Pluggable PCI Adapter" on page 831 to add a new adapter at the location recorded in "Step 1422-1" on page 136. The new adapter should be the same type as that removed in "Step 1422-1" on page 136. Return to "Step 1422-6" after the new adapter is added.

Step 1422-6
Did the PCI hot-plug procedure successfully add a new adapter at the location recorded in "Step 1422-1" on page 136?

NO   Go to "Step 1422-7".

YES   Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure**.

Step 1422-7
Shut down the partition that the faulty slot is assigned to.

Step 1422-8
Is the PCI slot power LED of the location recorded in "Step 1422-1" on page 136 on?

NO   Go to "Step 1422-9".

YES   Go to "Step 1422-14" on page 138

Step 1422-9
Are there any empty PCI slots attached to the system that are not assigned to any partitions?

NO   Go to "Step 1422-14" on page 138.

YES   Go to "Step 1422-10".

Step 1422-10
Assign the available empty and unassigned slot to the partition that the faulty slot is assigned to.

Step 1422-11

Insert a new adapter of the same type recorded in "Step 1422-1" on page 136 into the slot assigned in "Step 1422-10" on page 137.

Step 1422-12

Move any external cabling from the adapter in the slot recorded in "Step 1422-1" on page 136 to the adapter in the slot assigned in "Step 1422-10" on page 137.

Step 1422-13

Attempt to boot the partition.

Does the partition boot?.

NO   Go to "Step 1422-14".

YES   Partition and all resources are operational. Schedule repair with the customer for the slot recorded in "Step 1422-1" on page 136. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure**.

Step 1422-14

You cannot repair the adapter without powering off the entire system. Schedule repair with the customer for the slot recorded in "Step 1422-1" on page 136. **This ends the procedure**.

MAP 1520: Power

This procedure is used to locate power problems in the processor subsystem, I/O subsystem(s) or rack If a problem is detected, this procedure helps you isolate the problem to a failing unit.

Observe the following safety notices during service procedures.

DANGER

> **An electrical outlet that is not correctly wired could place hazardous voltage on 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.**
>
> **Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.**
>
> **During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communications lines.**
> **D06**

CAUTION:
This product is equipped with a three-wire power cable and plug for the user's safety. Use this power cable with a properly grounded electrical outlet to avoid electrical shock.
C01

CAUTION:
Energy hazard, remove power before servicing.
C22

Attention: To identify a FRU, these MAPs refer to FRU Identify LEDs. Information about the FRU Identify LEDs can be found in "FRU Identify LEDs" on page 51.

Find the symptom in the following table; then follow the instructions given in the Action column.

Power Problems	
Symptom/Reference Code	**Action**
The system will not power on and no error codes are available	Go to "MAP 1521: The System Will Not Power On And No Error Codes Are Available" on page 143.
1011 8700, 1011 8701	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
1014 6014, 1014 6814, 1014 B014, 1014 B814, 1015 6014, 1015 6814, 1015 B014, 1015 B814, 1016 6014, 1016 6814, 1016 B014, 1016 B814, 1017 6014, 1017 6814, 1017 B014, 1017 B814, 1021 6014, 1021 6814, 1021 B014, 1021 B814, 1022 6014, 1022 6814, 1022 B014, 1022 B814, 1023 6014, 1023 6814, 1023 B014, 1023 B814, 1024 6014, 1024 6814, 1024 B014, 1024 B814, 1025 6014, 1025 6814, 1025 B014, 1025 B814	Go to "MAP 152h: 3.3V Current/Voltage Problem in I/O Subsystem" on page 204.
1014 6024, 1014 6824, 1014 B024, 1014 B824, 1015 6024, 1015 6824, 1015 B024, 1015 B824, 1016 6024, 1016 6824, 1016 B024, 1016 B824, 1017 6024, 1017 6824, 1017 B024, 1017 B824, 1021 6024, 1021 6824, 1021 B024, 1021 B824, 1022 6024, 1022 6824, 1022 B024, 1022 B824, 1023 6024, 1023 6824, 1023 B024, 1023 B824, 1024 6024, 1024 6824, 1024 B024, 1024 B824, 1025 6024, 1025 6824, 1025 B024, 1025 B824	Go to "MAP 152i: 5.0 V Current/Voltage Problem in I/O Subsystem" on page 212.
1014 6034, 1014 6834, 1014 B034, 1014 B834, 1015 6034, 1015 6834, 1015 B034, 1015 B834, 1016 6034, 1016 6834, 1016 B034, 1016 B834, 1017 6034, 1017 6834, 1017 B034, 1017 B834, 1021 6034, 1021 6834, 1021 B034, 1021 B834, 1022 6034, 1022 6834, 1022 B034, 1022 B834, 1023 6034, 1023 6834, 1023 B034, 1023 B834, 1024 6034, 1024 6834, 1024 B034, 1024 B834, 1025 6034, 1025 6834, 1025 B034, 1025 B834	Go to "MAP 152j: 2.5 V Current/Voltage Problem in I/O Subsystem" on page 220.
1014 6044, 1014 6844, 1014 B044, 1014 B844, 1015 6044, 1015 6844, 1015 B044, 1015 B844, 1016 6044, 1016 6844, 1016 B044, 1016 B844, 1017 6044, 1017 6844, 1017 B044, 1017 B844, 1021 6044, 1021 6844, 1021 B044, 1021 B844, 1022 6044, 1022 6844, 1022 B044, 1022 B844, 1023 6044, 1023 6844, 1023 B044, 1023 B844, 1024 6044, 1024 6844, 1024 B044, 1024 B844, 1025 6044, 1025 6844, 1025 B044, 1025 B844	Go to "MAP 152k: 12.0 V Current/Voltage Problem in I/O Subsystem" on page 228.
1014 6054, 1014 6854, 1014 B054, 1014 B854, 1015 6054, 1015 6854, 1015 B054, 1015 B854, 1016 6054, 1016 6854, 1016 B054, 1016 B854, 1017 6054, 1017 6854, 1017 B054, 1017 B854, 1021 6054, 1021 6854, 1021 B054, 1021 B854, 1022 6054, 1022 6854, 1022 B054, 1022 B854, 1023 6054, 1023 6854, 1023 B054, 1023 B854, 1024 6054, 1024 6854, 1024 B054, 1024 B854, 1025 6054, 1025 6854, 1025 B054, 1025 B854	Go to "MAP 152l: -12.0V Current/Voltage Problem in I/O Subsystem" on page 236.

Power Problems	
Symptom/Reference Code	**Action**
1014 CD96, 1014 CDA6, 1014 CDB6, 1014 CDC6, **1015 CD96, 1015 CDA6, 1015 CDB6, 1015 CDC6,** **1016 CD96, 1016 CDA6, 1016 CDB6, 1016 CDC6,** **1017 CD96, 1017 CDA6, 1017 CDB6, 1017 CDC6,** **1021 CD96, 1021 CDA6, 1021 CDB6, 1021 CDC6,** **1022 CD96, 1022 CDA6, 1022 CDB6, 1022 CDC6,** **1023 CD96, 1023 CDA6, 1023 CDB6, 1023 CDC6,** **1024 CD96, 1024 CDA6, 1024 CDB6, 1024 CDC6,** **1025 CD96, 1025 CDA6, 1025 CDB6, 1025 CDC6**	Go to "MAP 152n: DASD Subsystem Power Problem" on page 248.
101A FE16 for BPC A or **101B FE16** for BPC B	Go to "MAP 1522: UEPO Switch On The BPC Is In The Bypass Position" on page 146
101A 0856 or **101A FE56**for BPR 1A **101A 0866** or **101A FE66** for BPR 2A **101A 0876** or **101A FE76** for BPR 3A **101B 0856** or **101B FE56** for BPR 1B **101B 0866** or **101B FE66** for BPR 2B **101B 0876** or **101B FE76** for BPR 3B	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A FDB6 for BPI A or **101B FDB6** for BPI B	Go to "MAP 1524: An Open Room EPO Switch Has Been Detected From One Side" on page 147.
101A 0D06 for BPA A or **101B 0D06** for BPA B	Go to "MAP 1525: There Is a 350 Volt Bulk Failure" on page 149.
101A 7A86 or **101A 7B86** for IBF 1A **101A 7A96** or **101A 7B96** for IBF 2A **101A 7AA6** or **101A 7BA6** for IBF 3A **101B 7A86** or **101B 7B86** for IBF 1B **101B 7A96** or **101B 7B96** for IBF 2B **101B 7AA6** or **101B 7BA6** for IBF 3B	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A 1C06, 101B 1C06, 101C 1C06, 1014 1C06, **1015 1C06, 1016 1C06, 1017 1C06, 1021 1C06,** **1022 1C06, 1023 1C06**	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
101C E006 or **101C E106**	Go to "MAP 1528: There Is A Processor (Critical/Warning) Overtemperature Fault" on page 157.
101A D216 for BPA A or **101B D216** for BPA B	Go to "MAP 1529: There Is A Bulk Power Assembly (BPA) Communication Failure" on page 157.
101A F806 or **101A F906** for BPC A or **101B F806** or **101B F906** for BPC B	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.

Power Problems	
Symptom/Reference Code	**Action**
1014 xx15, 1014 xx25, 1015 xx15, 1015 xx25, 1016 xx15, 1016 xx25, 1017 xx15, 1017 xx25, 101C xx15, 101C xx25, 101C xx35, 101C xx45, 101C xx55, 101C xx75, 101C xx85, 101C xx95, 101C xxA5, 101A x115, 101A x125, 101A x135, 101A x215, 101A x225, 101A x235, 101A x315, 101A x325, 101A x335, 101A x415, 101A x425, 101A x435, 101A x515, 101A x525, 101A x535, 101A x615, 101A x625, 101A x635, 101A x715, 101A x725, 101A x735, 101A x825, 101A x835, 101A x925, 101A x935, 101A xA25, 101A xA35, 101B x115, 101B x125, 101B x135, 101B x215, 101B x225, 101B x235, 101B x315, 101B x325, 101B x335, 101B x415, 101B x425, 101B x435, 101B x515, 101B x525, 101B x535, 101B x615, 101B x625, 101B x635, 101B x715, 101B x725, 101B x735, 101B x825, 101B x835, 101B x925, 101B x935, 101B xA25, 101B xA35, 1021 xx15, 1021 xx25, 1022 xx15, 1022 xx25, 1023 xx15, 1023 xx25, 1024 xx15, 1024 xx25, 1025 xx15, 1025 xx25	Go to "MAP 152m: Cable Problem in Power Subsystem" on page 244.
101C 6014, 101C 6814, 101C B014, 101C B814	Go to "MAP 152b: 2.5 V Current/Voltage Problem in Processor Subsystem" on page 161.
101C 6114, 101C 6914, 101C B114, 101C B914	Go to "MAP 152c: 1.8 V Current/Voltage Problem in Processor Subsystem" on page 167.
101C 6124, 101C 6924, 101C B124, 101C B924	Go to "MAP 152e: 1.5 V CPU Current/Voltage Problem in Processor Subsystem" on page 184.
101C 6134, 101C 6934, 101C B134, 101C B934	Go to "MAP 152d: 1.5 V Auxiliary Current/Voltage Problem in Processor Subsystem" on page 176.
101C 6144, 101C 6944, 101C B144, 101C B944	Go to "MAP 152f: 3.3 V Current/Voltage Problem in Processor Subsystem" on page 189.
101C 6514, 101C 6D14, 101C B514, 101C BD14	Go to "MAP 152g: 5.0 V Current/Voltage Problem in Processor Subsystem" on page 197.

MAP 1521: The System Will Not Power On And No Error Codes Are Available

Step 1521-1

Ensure that the following are true:

- Both power cords are properly connected
- The UEPO panel switch is in the ON position
- The UEPO BYPASS switches on both BPCs are in the Normal position
- The on/off switches located on all the BPRs are in the on (left) position

  Note: A switch set to the off position cannot cause this problem, however, any switch found in the off position must be reset to the on position (wait 10 seconds) before proceeding.

- The cable from UEPO connector J00 to BPC-A connector J05 and the cable from UEPO connector J01 to BPC-B connector J05 are properly connected without visible sign of damage.
- The room temperature is *not* in excess of the maximum allowed (40 degrees Celsius or 104 degrees Fahrenheit)

  Note: If the room temperature exceeds the specified maximum, the machine may continually cycle on and off.

Are all the above conditions true?

NO   Correct any problems and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Go to "Step 1521-2".

Step 1521-2

Check the LEDs on both sides of the bulk power assembly (BPA).

Are all LEDs off on *both* sides of BPA?

NO   Go to "Step 1521-3".

YES   Go to "Step 1521-9" on page 145

Step 1521-3

Check the following LED states on *both* Bulk Power Controllers (BPCs):

- UEPO PWR LED turned on
- BPC GOOD LED turned on
- All other LEDs are off

Are all of the above true?

NO   Go to "Step 1521-4" on page 144.

YES   Go to "Step 1521-5" on page 144.

Step 1521-4

Independent faults are indicated on both sides of the BPA. Each side must be isolated separately. Call for support. **This ends the procedure.**

Step 1521-5

Check the External (Room) EPO Connection if used.

If a room emergency power off (EPO) circuit is used, the external room EPO circuit is connected to the J02 connector on the lower edge of the UEPO Switch.

Is a cable connected into the connector J02 on the UEPO Switch?

NO   Go to "Step 1521-6".

YES   Go to "Step 1521-7".

Step 1521-6

Is the internal toggle switch on the EPO panel card set to the 'RM EPO BYPASS' position?

NO   Set the internal toggle switch to the 'RM EPO BYPASS' position, and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Exchange the UEPO card assembly. Follow all the steps in the removal and replacement procedure for the "Unit Emergency Power Off (UEPO) Card Assembly" on page 757. Go to "Step 1521-8" on page 145.

Step 1521-7

Note: Read the Danger and Caution notices under "Safety Notices" on page xi before continuing with this procedure.

Disconnect the cable from UEPO connector J02, and set the toggle switch to the 'RM EPO BYPASS' position.

Does the UEPO CMPLT LED on at least one BPC become lit?

NO   Exchange the UEPO card assembly. Follow all the steps in the removal and replacement procedure for the "Unit Emergency Power Off (UEPO) Card Assembly" on page 757. Go to "Step 1521-8" on page 145.

YES   Notify the customer that the room EPO circuit is defective at this connection and requires service. **This ends the procedure.**

Step 1521-8
Is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Call for support. **This ends the procedure.**

Step 1521-9

Note: Read the Danger and Caution notices under "Safety Notices" on page xi before continuing with this procedure.

1.   Prepare a multimeter to measure up to 600 V ac.
2.   Use the multimeter to measure the ac voltage at the test points on the frame labeled Phase A and Phase B.

Is the ac voltage greater than 180 V ac?

NO   Inform the customer that the line voltage into the BPA is missing or too low. **This ends the procedure.**

YES   Independent faults are indicated on both sides of the BPA. Each side must be isolated separately. Call for support. **This ends the procedure.**

MAP 1522: UEPO Switch On The BPC Is In The Bypass Position

Step 1522-1
Check the UEPO Switch on the BPC on the BPA that is exhibiting the failure.

Is the switch in the NORMAL position?

NO   Set UEPO switch on the BPC to the NORMAL position and go to "Step 1522-2".

YES   Go to "Step 1522-2".

Step 1522-2
Press the **Service Complete** button.

Is error code 101A FE16 or 101B FE16 displayed?

NO   The problem has already been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Replace the BPC on the side that is exhibiting the failure. Follow all the steps in the "Bulk Power Controller (BPC)" on page 753. Go to "Step 1522-3".

Step 1522-3
If not done already, press the **service complete** button.

Is error code 101A FE16 or 101B FE16 displayed?

NO   The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure.**

YES   Call for support. **This ends the procedure.**

MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault

Step 1523-1
Check the position of the on/off switch on the BPR referenced by the error code that sent you to this MAP.

Is the switch in the ON position (to the left)?

NO Set the switch to the ON position (to the left), and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES Go to "Step 1523-2".

Step 1523-2
Exchange the following FRUs one at a time:
- BPR referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
- BPC on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Controller (BPC)" on page 753.
- BPE on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Enclosure (BPE)" on page 755.

After each FRU exchanged, is the error code that sent you to this MAP still reported?

NO Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure.**

YES Replace the next FRU on the list.

MAP 1524: An Open Room EPO Switch Has Been Detected From One Side

Step 1524-1
Check the unit emergency power off (UEPO) panel.

Is a customer room EPO cable plugged into the UEPO panel?

NO Go to "Step 1524-3" on page 148.

YES Go to "Step 1524-2" on page 148.

Step 1524-2

1. Set UEPO switch on both BPCs to the BYPASS position.

2. Unplug the customer room EPO cable.

3. Set switch (J4) on the UEPO panel to EPO BYPASS position.

4. Set UEPO switch on both BPCs back to the NORMAL position.

5. Press the **service complete** button.

Is 101A FDB6 or 101B FDB6 generated?

NO   Go to "Step 1524-4".

YES   Go to "Step 1524-3".

Step 1524-3
Exchange the following FRUs one at a time:

1. UEPO card assembly. Follow all steps in the removal and replacement procedures for "Unit Emergency Power Off (UEPO) Card Assembly" on page 757.

2. Cable from UEPO to BPC on the side referenced by the error code that sent you to this MAP.

3. BPC on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Controller (BPC)" on page 753.

After each FRU exchanged, is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   Replace the next FRU on the list. If all FRUs on the list have been replaced, call for support.

Step 1524-4
Perform the following actions one at a time:

1. Replace the UEPO card assembly. Follow all steps in the removal and replacement procedures for "Unit Emergency Power Off (UEPO) Card Assembly" on page 757.

2. Check with the customer's site services to have them test the room EPO switch for correct operation.

After each action is performed, is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   Perform the next action on the list. If all actions on the list have been performed, call for support.

MAP 1525: There Is a 350 Volt Bulk Failure

Step 1525-1

Note: Read the Danger and Caution notices under "Safety Notices" on page xi before continuing with this procedure.

1. Prepare a multimeter to measure up to 600 V ac.
2. Use the multimieter to measure the ac voltage at the following test points on the faceplate of the BOA that is referecned by the error code that sent you to this MAP:
   - Phase A and phase B
   - Phase B and phase C
   - Phase C and phase A

Are all the readings greater than 180 V ac?

NO   Go to "Step 1525-7" on page 151.

YES   Go to "Step 1525-2".

Step 1525-2

Notes:

1. This problem can be caused by any BPR plugged into the failing BPA.
2. The system can have one or two BPRs, depending on the system configuration.
3. Each BPR on the failing BPA must be checked independently.

The following steps check all the BPRs on the side of the BPA (A or B) referenced by the error code that sent you to this MAP.

Are there any remaining BPRs to be checked?

NO   Go to "Step 1525-3".

YES   Go to "Step 1525-4" on page 150.

Step 1525-3

Notes:

1. This problem can be caused by any BPD plugged into the failing BPA.
2. The system can have up to three BPDs, depending on the system configuration.
3. Each BPD on the failing BPA must be checked independently.

The following steps check all the BPDs on the side of the BPA (A or B) referenced by the error code that sent you to this MAP.

Are there any BPDs remaining to be checked?

NO   Exchange the following FRUs one at a time:
   - BPC on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Controller (BPC)" on page 753.
   - Replace the BPE on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Enclosure (BPE)" on page 755.

   After each FRU is exchanged, is the error code that sent you to this MAP still reported?

NO The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES Replace the next FRU on the list. If all FRUs on the list have been replaced, call for support.

YES Go to "Step 1525-5".

Step 1525-4

Note: Be sure you are working on the side of the BPA (A or B) referenced by the error code that sent you to this MAP. FRUs on the operating side of the BPA (with BPC GOOD LED on) *must not* be disturbed during this procedure.

1. Turn the BPR on/off switch to the off position (to the right).
2. Unplug the BPR to be checked and carefully pull it approximately 25 mm (1 inch) away from the backplane without unplugging any cables.

   If there is more than one BPR left to be checked, start with the uppermost unchecked BPR and make a note of which BPR you unplugged.

Does the BPC GOOD LED on the BPC come on and stay on?

NO Replug the BPR and set all the BPR on/off switches on this BPA to the on position (to the left), and continue with "Step 1525-1" on page 149.

YES Replace the BPR that is currently unplugged. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752. Go to "Step 1525-6".

Step 1525-5

Note: Be sure you are working on the side of the BPA (A or B) referenced by the error code that sent you to this MAP. FRUs on the operating side of the BPA (with BPC GOOD LED on) *must not* be disturbed during this procedure.

1. Turn all the BPR on/off switches on this BPA to the off position (to the right).
2. Unplug the BPD to be checked and carefully pull it approximately 25 mm (1 inch) away from the backplane without unplugging any cables.

   If there is more than one BPD left to be checked, start with the uppermost unchecked BPD and make a note of which BPD you unplugged.
3. Set all the BPR on/off switches on this BPA to the on position (to the left).

Does the BPC GOOD LED on the BPC come on and stay on?

NO Replug the BPD and continue with "Step 1525-3" on page 149.

YES Replace the BPD that is currently unplugged. Follow all steps in the removal and replacement procedures for "Bulk Power Distributor (BPD)" on page 753. Go to "Step 1525-6".

Step 1525-6
Is the error code that sent you to this MAP still reported?

NO The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES If the error code that directed you to this map was 1011 8710 or 1011 8711, then return to the "SPCN Error Codes" on page 348 table and take the next action defined in the table for these error codes.

   If the error code that directed you to this map was neither 1011 8710 nor 1011 8711, then call support.

Step 1525-7

Inform the customer that the line voltage into the BPA is missing or is too low and must be checked.

Can the line voltage be checked now?

NO   Defer this repair until the customer's utility can check the line voltage.

YES   Go to "Step 1525-8".

Step 1525-8

Does the customer utility voltage checkout OK?

NO   The customer must restore utility voltage.

YES   Exchange the power cord and go to "Step 1525-9".

Step 1525-9

Press the **service complete** button.

Is the error code that sent you to this MAP reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   Call for support.

MAP 1526: There Is An Integrated Battery Feature (IBF) Failure

Step 1526-1
Is the IBF feature installed?

NO   Replace the BPR that is connected to the IBF referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures in "Bulk Power Regulator (BPR)" on page 752. Go to "Step 1526-7" on page 155.

YES   Go to "Step 1526-2".

Step 1526-2
Did any of the following error codes send you to this MAP?
- **101A 7A86**
- **101A 7A96**
- **101A 7AA6**
- **101B 7A86**
- **101B 7A96**
- **101B 7AA6**

NO   Go to "Step 1526-3".

YES   Go to "Step 1526-5" on page 154.

Step 1526-3
Check the cable between the BPR and the IBF. The IBF LED on the IBF referenced in the error code that brought you to this MAP will be off.

Is the cable plugged on both sides?

NO   Plug in the cable and go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   Go to "Step 1526-4" on page 153.

Step 1526-4

Check the circuit breaker on the IBF referenced in the error code that brought you to this MAP. The IBF LED on the IBF referenced in the error code that brought you to this MAP will be off.

Is the circuit breaker set on?

NO   Replace the IBF referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures in "Integrated Battery Feature (IBF)" on page 758. Go to "Step 1526-7" on page 155.

YES   Exchange the following FRUs one at a time:

- The BPR that is connected to the IBF referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
- The IBF that is referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Integrated Battery Feature (IBF)" on page 758.
- The cable between the BPR and the IBF referenced in the error code that brought you to this MAP.

After each FRU is exchanged, is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*

YES   Replace the next FRU on the list. If all FRUs in the list have been replaced, call for support.

Step 1526-5

Check the circuit breaker on the IBF referenced in the error code that brought you to this MAP. The IBF LED on the IBF referenced in the error code that brought you to this MAP will be off.

Is the circuit breaker set on?

NO   Go to "Step 1526-6"

YES   Replace the IBF referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures in "Integrated Battery Feature (IBF)" on page 758. Go to "Step 1526-7" on page 155.

Step 1526-6

Set the breaker to the on (down) position. Wait 10 seconds after the LED on the IBF referenced in the error code that brought you to this MAP comes on.

Does the circuit breaker remain on?

NO   Exchange the following FRUs one at a time:

- The BPR that is connected to the IBF referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
- The IBF that is referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Integrated Battery Feature (IBF)" on page 758.
- The cable between the BPR and the IBF referenced in the error code that brought you to this MAP.

After each FRU is exchanged, is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   Replace the next FRU on the list. If all FRUs in the list have been replaced, call for support.

YES   Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1526-7
Is the error code that sent you to this MAP still reported?

NO The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES Call for support.

MAP 1527: An Airflow Loss Has Been Detected

Step 1527-1
Check the following air inlets and outlets for blockage or obstruction:
- Front and rear frame door openings (except for acoustical foam)
- Bulk power assembly (BPA) cage
  - Inlet opening in left side of front BPA, BPA A
  - Outlet opening in right side of rear BPA, BPB B
  - Bulk power fan (BPF) cover is present on front BPA and absent on rear BPA
- Processor subsystem cage
  - Inlet opening at top front of processor subassembly
  - Outlet opening at top rear of processor subassembly
- I/O subsystem
  - Inlet opening at front of the I/O subassembly
  - Outlet opening at rear of I/O subassembly

Are all of these openings clear and unobstructed?

NO Remove any obstructions and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES Go to "Step 1527-2".

Step 1527-2
Do all book positions in the processor subsystem contain books or fillers?

NO Fill any open positions with books or fillers, and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES Go to "Step 1527-3" on page 156.

Step 1527-3

Are the air filters clean and free of any obstructions?

NO   Clean and replace the air filters, then go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Go to "Step 1527-4".

Step 1527-4

Remove the blowers or fans from the affected subsystem.

Attention: Do not put your hand into the enclosure.

Push the spring-loaded door open and hold it open with one hand. Using a suitably long instrument (a 12-inch ruler or long-handled screwdriver), push gently against the recirculation flaps at the back of each blower or fan enclosure.

Are all the recirculation flaps in all enclosures free to swing up?

NO   The enclosure is not a replaceable FRU. Call your next level of support.

YES   Reinstall the blower or fans removed earlier and go to "Step 1527-5" ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1527-5

1. Replace the BPR on the side indicated by the error code that sent you to this MAP.
2. Call your next level of support.

MAP 1528: There Is A Processor (Critical/Warning) Overtemperature Fault

Step 1528-1
Is the room ambient temperature in normal range (less than 35 degrees C/ 95 degrees F)?

NO   Notify the customer. The customer must bring the room temperature within normal range. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Go to "Step 1528-2".

Step 1528-2
Are the system front and rear doors free of obstructions?

NO   Notify the customer. The system must be free of obstructions for proper airflow. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES

Exchange the following FRUs one at a time:

1. The processor MCM module 0, at location U1.18-P1-C1. Follow all steps in the removal and replacement procedures for "MCM Module (Processor) and Passthru Modules" on page 769.
2. The processor MCM module 3, at location U1.18-P1-C2, if present. Follow all steps in the removal and replacement procedures for "MCM Module (Processor) and Passthru Modules" on page 769.
3. The processor MCM module 1, at location U1.18-P1-C3. Follow all steps in the removal and replacement procedures for "MCM Module (Processor) and Passthru Modules" on page 769.
4. The processor MCM module 2, at location U1.18-P1-C4. Follow all steps in the removal and replacement procedures for "MCM Module (Processor) and Passthru Modules" on page 769.

After each FRU is exchanged, is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Replace the next FRU on the list. If all FRUs on the list have been replaced, call for support.

MAP 1529: There Is A Bulk Power Assembly (BPA) Communication Failure

Step 1529-1
Check the position of the on/off switch on the BPRs.

Is the switch in the ON position (to the left)?

NO   Set the switch to the ON position (to the left), and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

YES   Go to "Step 1529-2".

Step 1529-2

Note: Read the Danger and Caution notices under "Safety Notices" on page xi before continuing with this procedure.

1. Prepare a multimeter to measure up to 600 V ac.
2. Use the multimeter to measure the ac voltage at the following test points on the face plate of the BPA that is not referenced by the error code that sent you to this MAP:

- Phase A and phase B
- Phase B and phase C
- Phase C and phase A

Are all the readings greater than 180 V ac?

NO   Go to "Step 1529-3".

YES

Exchange the following FRUs one at a time:

1. BPR 1, that is connected to the IBF not referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
2. BPR 2, that is connected to the IBF not referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
3. BPR 3, that is connected to the IBF not referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
4. BPC on the other side not referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Controller (BPC)" on page 753.
5. BPE on the other side not referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Enclosure (BPE)" on page 755.

After each FRU is exchanged, is the error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*

YES   Replace the next FRU on the list. If all FRUs on the list have been replaced, call for support.

Step 1529-3
Inform the customer that the line voltage into the BPA is missing or too low, and needs to be checked.

Can the line voltage be checked now?

NO   Defer this repair until the customer's utility can check the line voltage. **This ends the procedure.**

YES   Go to "Step 1529-4".

Step 1529-4
Does the customer utility voltage check out OK?

NO   The customer must restore utility voltage. **This ends the procedure.**

YES   Exchange the power cord, and go to "Step 1529-5".

Step 1529-5
Press the **service complete** button.

Is error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure.**

YES   Call for support. **This ends the procedure.**

MAP 152a: Loss of ac Power or Phase Missing

Step 152a-1

Press the **Service complete** button.

Is the error code that sent you to this MAP still reported?

NO   This was a transient condition. The condition no longer exists. No service action is required.

YES   Go to "Step 152a-2".

Step 152a-2

Check all LEDs on the BPA that is not referenced by the error code that sent you to this MAP.

Are they OK?

NO   Defer this repair until the failure on the other BPA can be repaired. **This ends the procedure.**

YES   Go to "Step 152a-3".

Step 152a-3

Note: Read the Danger and Caution notices under "Safety Notices" on page xi before continuing with this procedure.

1. Prepare a multimeter to measure up to 600 V ac.
2. Use the multimeter to measure the ac voltage at the following test points on the faceplate of the BPA that is referenced by the error code that sent you to this MAP:
   - Phase A and phase B
   - Phase B and phase C
   - Phase C and phase A

Are all the readings greater than 180 V ac?

NO   Go to "Step 152a-4" on page 161.

YES

    Exchange the following FRUs one at a time:

1. BPR 1, that is connected to the BPA side referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
2. BPR 2, that is connected to the BPA side referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
3. BPR 3, that is connected to the BPA side referenced in the error code that brought you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Regulator (BPR)" on page 752.
4. BPC on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Controller (BPC)" on page 753.
5. BPE on the side referenced by the error code that sent you to this MAP. Follow all steps in the removal and replacement procedures for "Bulk Power Enclosure (BPE)" on page 755.

    After each FRU is exchanged, is the error code that sent you to this MAP still reported?

    NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES Replace the next FRU on the list. If all FRUs on the list have been replaced, call for support.

Step 152a-4

Inform the customer that the line voltage into the BPA is missing or too low, and must be checked.

Can the line voltage be checked now?

NO   Defer this repair until the customer's utility can check the line voltage. **This ends the procedure.**

YES   Go to "Step 152a-5".

Step 152a-5
Does the customer utility voltage check out OK?

NO   The customer must restore utility voltage. **This ends the procedure.**

YES   Exchange the power cord, and go to "Step 152a-6".

Step 152a-6
Press the **service complete** button.

Is error code that sent you to this MAP still reported?

NO   The problem has been corrected. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*. **This ends the procedure.**

YES   Call for support. **This ends the procedure.**

MAP 152b: 2.5 V Current/Voltage Problem in Processor Subsystem

Step 152b-1
Record the error code and location code(s) that sent you to this MAP.

Step 152b-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152b-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152b-4" on page 162.

No   Call for support.

Step 152b-4

Pull out the following books about 25 mm (1 inch), if present:

- Memory book 0, at location U1.18-P1-M2
- Memory book 1, at location U1.18-P1-M3
- Memory book 2, at location U1.18-P1-M7
- Memory book 3, at location U1.18-P1-M6

Step 152b-5

Turn on the power.

Step 152b-6

Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes   Go to "Step 152b-12" on page 163.

No   Go to "Step 152b-7".

Step 152b-7

One of the books just removed is defective.

1. Turn off the power.
2. Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152b-8

Reinsert one of the books that is pulled out and listed in step 152b-4.

Step 152b-9

Turn on the power.

Step 152b-10

Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152b-11".

Step 152b-11

Have all the books listed in step 152b-4 been reinserted?

Yes   The symptom has changed. **This ends the procedure**.

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152b-8".

Step 152b-12
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152b-13
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152b-14".

No   Call for support.

Step 152b-14
Pull out the following books about 25 mm (1 inch), if present:
* Memory book 4, at location U1.18-P1-M4
* Memory book 5, at location U1.18-P1-M8
* Memory book 6, at location U1.18-P1-M5
* Memory book 7, at location U1.18-P1-M1

Step 152b-15
Turn on the power.

Step 152b-16
Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes   Go to "Step 152b-22" on page 164.

No   Go to "Step 152b-17".

Step 152b-17
One of the books just removed is defective.
1. Turn off the power.
2. Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152b-18
Reinsert one of the books that is pulled out and listed in step "Step 152b-14".

Step 152b-19
Turn on the power.

Step 152b-20
Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152b-21".

Step 152b-21
Have all the books listed in "Step 152b-14" on page 163 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152b-18" on page 163.

Step 152b-22
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152b-23
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152b-24".

No Call for support.

Step 152b-24
Pull out the following books about 25 mm (1 inch), if present:
* Secondary I/O book, at location U1.18-P1-H3
* Third I/O book, at location U1.18-P1-H4
* Capacitor book, at location U1.18-P1-V3
* Capacitor book, at location U1.18-P1-V7

Step 152b-25
Turn on the power.

Step 152b-26
Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes Go to "Step 152b-32" on page 165.

No Go to "Step 152b-27" on page 165.

Step 152b-27
One of the books just removed is defective.

1. Turn off the power.
2. Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152b-28
Reinsert one of the books that is pulled out and listed in "Step 152b-24" on page 164.

Step 152b-29
Turn on the power.

Step 152b-30
Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152b-31".

Step 152b-31
Have all the books listed in "Step 152b-24" on page 164 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152b-28".

Step 152b-32
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152b-33
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152b-34" on page 166.

No   Call for support.

Step 152b-34
Replace the books in the following list, if present, one at a time and in the order listed:
* Primary I/O Book, at location U1.18-P1-H2
* DCA 1-RH, at location U1.18-P1-V1
* DCA 2-RH, at location U1.18-P1-V2
* DCA 3-RH, at location U1.18-P1-V4
* DCA 4-RH, at location U1.18-P1-V5
* DCA 5-RH, at location U1.18-P1-V6
* DCA 6-RH, at location U1.18-P1-V8

Step 152b-35
Turn on the power.

Step 152b-36
Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes   Go to "Step 152b-37".

No   The book just replaced is defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152b-37
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152b-38
Remove the new book that was just installed in "Step 152b-34" and reinstall the original book.

Step 152b-39
Have all the books listed in "Step 152b-34" been replaced with new or original books?

Yes   Go to "Step 152b-40".

No   Go to "Step 152b-34".

Step 152b-40
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152b-41
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152b-42" on page 167.

No   Call for support.

Step 152b-42
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at location U1.18-P1.

Step 152b-43
Turn on the power.

Step 152b-44
Did the system stop with the same error code as recorded in "Step 152b-1" on page 161?

Yes Go to "Step 152b-45".

No The system backplane was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152b-45
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152b-46
Has the system backplane been replaced?

Yes Call for support.

No Go to "Step 152b-42".

MAP 152c: 1.8 V Current/Voltage Problem in Processor Subsystem

Step 152c-1
For future reference, record the error code in the operator panel display.

Step 152c-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152c-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152c-4" on page 168.

No Call for support.

Step 152c-4

Pull out the following books about 25 mm (1 inch), if present:

- Memory book 0, at location U1.18-P1-M2
- Memory book 1, at location U1.18-P1-M3
- Memory book 2, at location U1.18-P1-M7
- Memory book 3, at location U1.18-P1-M6

Step 152c-5

Turn on the power.

Step 152c-6

Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   Go to "Step 152c-12" on page 169.

No   Go to "Step 152c-7".

Step 152c-7

One of the books just removed is defective.

1. Turn off the power.
2. Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152c-8

Reinsert one of the books that is pulled out and listed in "Step 152c-4".

Step 152c-9

Turn on the power.

Step 152c-10

Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152c-11".

Step 152c-11

Have all the books listed in "Step 152c-4" been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152c-8".

Step 152c-12
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152c-13
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152c-14".

No   Call for support.

Step 152c-14
Pull out the following books about 25 mm (1 inch), if present:
* Memory book 4, at location U1.18-P1-M4
* Memory book 5, at location U1.18-P1-M8
* Memory book 6, at location U1.18-P1-M5
* Memory book 7, at location U1.18-P1-M1

Step 152c-15
Turn on the power.

Step 152c-16
Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   Go to "Step 152c-22" on page 170.

No   Go to "Step 152c-17".

Step 152c-17
One of the books just removed is defective.

1. Turn off the power.

2. Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152c-18
Reinsert one of the books that is pulled out and listed in "Step 152c-14".

Step 152c-19
Turn on the power.

Step 152c-20
Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152c-21".

Step 152c-21
Have all the books listed in "Step 152c-14" on page 169 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152c-18" on page 169.

Step 152c-22
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152c-23
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152c-24".

No   Call for support.

Step 152c-24
Pull out the following books about 25 mm (1 inch), if present:
- Secondary I/O book, at location U1.18-P1-H3
- Third I/O book, at location U1.18-P1-H4
- Capacitor book, at location U1.18-P1-V3
- Capacitor book, at location U1.18-P1-V7

Step 152c-25
Turn on the power.

Step 152c-26
Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   Go to "Step 152c-32" on page 171.

No   Go to "Step 152c-27" on page 171.

Step 152c-27
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152c-28
Reinsert one of the books that is pulled out and listed in "Step 152c-24" on page 170.

Step 152c-29
Turn on the power.

Step 152c-30
Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152c-31".

Step 152c-31
Have all the books listed in "Step 152c-24" on page 170 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152c-28".

Step 152c-32
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152c-33
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152c-34" on page 172.

No   Call for support.

Step 152c-34

Replace the books in the following list, if present, one at a time and in the order listed:
- Primary I/O book, at location U1.18-P1-H2
- DCA 1-RH, at location U1.18-P1-V1
- DCA 2-RH, at location U1.18-P1-V2
- DCA 3-RH, at location U1.18-P1-V4
- DCA 4-RH, at location U1.18-P1-V5
- DCA 5-RH, at location U1.18-P1-V6
- DCA 6-RH, at location U1.18-P1-V8

Step 152c-35

Turn on the power.

Step 152c-36

Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   Go to "Step 152c-37".

No   The book just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152c-37

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152c-38

Remove the new book that was just installed in "Step 152c-34" and reinstall the original book.

Step 152c-39

Have all the books listed in "Step 152c-34" been replaced with new or original books?

Yes   Go to "Step 152c-40".

No   Go to "Step 152c-34".

Step 152c-40

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152c-41

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152c-42".

No   Call for support.

Step 152c-42

Record the location of each installed L3 module.

Attention: L3 modules have a limit of three plug cycles. Before removing any of the L3 modules in the following list, call for support.

Remove all of the following modules, if present:
- L3 module, at location U1.18-P1-C5
- L3 module, at location U1.18-P1-C6
- L3 module, at location U1.18-P1-C7
- L3 module, at location U1.18-P1-C8

- L3 module, at location U1.18-P1-C9
- L3 module, at location U1.18-P1-C10
- L3 module, at location U1.18-P1-C11
- L3 module, at location U1.18-P1-C12
- L3 module, at location U1.18-P1-C13
- L3 module, at location U1.18-P1-C14
- L3 module, at location U1.18-P1-C15
- L3 module, at location U1.18-P1-C16
- L3 module, at location U1.18-P1-C17
- L3 module, at location U1.18-P1-C18
- L3 module, at location U1.18-P1-C19
- L3 module, at location U1.18-P1-C20
- System clock, at location U1.18-P1-X5

Step 152c-43
Turn on the power.

Step 152c-44
Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes　Go to "Step 152c-50" on page 174.

No　Go to "Step 152c-45".

Step 152c-45
One of the modules just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152c-46

Reinstall one of the modules that is removed and listed in "Step 152c-42" on page 172.

Step 152c-47

Turn on the power.

Step 152c-48

Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes The module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152c-49".

Step 152c-49

Have all the modules listed in "Step 152c-42" on page 172 been reinstalled?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152c-45" on page 173.

Step 152c-50

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152c-51

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152c-52".

No Call for support.

Step 152c-52

Attention: Before replacing the system backplane, call for support.

Replace the system backplane, at location U1.18-P1.

Step 152c-53

Turn on the power.

Step 152c-54
Did the system stop with the same error code as recorded in "Step 152c-1" on page 167?

Yes   Go to "Step 152c-55".

No   The system backplane was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152c-55
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152c-56
Has the system backplane been replaced?

Yes   Call for support.

No   Go to "Step 152c-52" on page 174.

MAP 152d: 1.5 V Auxiliary Current/Voltage Problem in Processor Subsystem

Step 152d-1
Record the error code and the location code(s) that sent you to this MAP.

Step 152d-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152d-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152d-4".

No   Call for support.

Step 152d-4
Pull out the following books about 25 mm (1 inch), if present:
- Memory book 0, at location U1.18-P1-M2
- Memory book 1, at location U1.18-P1-M3
- Memory book 2, at location U1.18-P1-M7
- Memory book 3, at location U1.18-P1-M6

Step 152d-5
Turn on the power.

Step 152d-6
Did the system stop with the same error code as recorded in "Step 152d-1"?

Yes   Go to "Step 152d-12" on page 177.

No   Go to "Step 152d-7".

Step 152d-7
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152d-8
Reinsert one of the books that is pulled out and listed in "Step 152d-4" on page 176.

Step 152d-9
Turn on the power.

Step 152d-10
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152d-11".

Step 152d-11
Have all the books listed in "Step 152d-4" on page 176 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152d-8".

Step 152d-12
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152d-13
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152d-14".

No Call for support.

Step 152d-14
Pull out the following books about 25 mm (1 inch), if present:
- Memory book 4, at location U1.18-P1-M4
- Memory book 5, at location U1.18-P1-M8
- Memory book 6, at location U1.18-P1-M5
- Memory book 7, at location U1.18-P1-M1

Step 152d-15
Turn on the power.

Step 152d-16
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes   Go to "Step 152d-22" on page 179.

No   Go to "Step 152d-17".

Step 152d-17
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152d-18
Reinsert one of the books that is pulled out and listed in "Step 152d-14" on page 177.

Step 152d-19
Turn on the power.

Step 152d-20
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152d-21".

Step 152d-21
Have all the books listed in "Step 152d-14" on page 177 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152d-18".

Step 152d-22

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152d-23

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152d-24".

No Call for support.

Step 152d-24

Pull out the following books about 25 mm (1 inch), if present:

- Secondary I/O book, at location U1.18-P1-H3
- Third I/O book, at location U1.18-P1-H4
- Capacitor book, at location U1.18-P1-V3
- Capacitor book, at location U1.18-P1-V7

Step 152d-25

Turn on the power.

Step 152d-26

Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes Go to "Step 152d-32" on page 180.

No Go to "Step 152d-27".

Step 152d-27

One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152d-28

Reinsert one of the books that is pulled out and listed in "Step 152d-24".

Step 152d-29

Turn on the power.

Step 152d-30
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152d-31".

Step 152d-31
Have all the books listed in "Step 152d-24" on page 179 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152d-28" on page 179.

Step 152d-32
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152d-33
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152d-34".

No Call for support.

Step 152d-34
Replace the books in the following list, if present, one at a time and in the order listed:
* DCA 1-RH, at location U1.18-P1-V1
* DCA 2-RH, at location U1.18-P1-V2
* DCA 3-RH, at location U1.18-P1-V4
* DCA 4-RH, at location U1.18-P1-V5
* DCA 5-RH, at location U1.18-P1-V6
* DCA 6-RH, at location U1.18-P1-V8

Step 152d-35
Turn on the power.

Step 152d-36
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes Go to "Step 152d-37".

No The book just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 152d-37
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152d-38
Remove the new book that was just installed in "Step 152d-34" on page 180 and reinstall the original book.

Step 152d-39
Have all the books listed in "Step 152d-34" on page 180 been replaced with new or original books?

Yes Go to "Step 152d-40".

No Go to "Step 152d-34" on page 180.

Step 152d-40
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152d-41
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152d-42".

No Call for support.

Step 152d-42
Record the location of each installed L3 module.

Attention: L3 modules have a limit of three plug cycles. Before removing any of the L3 modules in the following list, call for support.

Remove all of the following modules if present:
- L3 module, at location U1.18-P1-C5
- L3 module, at location U1.18-P1-C6
- L3 module, at location U1.18-P1-C7
- L3 module, at location U1.18-P1-C8
- L3 module, at location U1.18-P1-C9
- L3 module, at location U1.18-P1-C10
- L3 module, at location U1.18-P1-C11
- L3 module, at location U1.18-P1-C12
- L3 module, at location U1.18-P1-C13
- L3 module, at location U1.18-P1-C14
- L3 module, at location U1.18-P1-C15
- L3 module, at location U1.18-P1-C16
- L3 module, at location U1.18-P1-C17
- L3 module, at location U1.18-P1-C18
- L3 module, at location U1.18-P1-C19
- L3 module, at location U1.18-P1-C20

Step 152d-43
Turn on the power.

Step 152d-44
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes   Go to "Step 152d-50" on page 183.

No   Go to "Step 152d-45".

Step 152d-45
One of the modules just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152d-46
Reinstall one of the L3 modules that is removed and listed in "Step 152d-42" on page 181.

Step 152d-47
Turn on the power.

Step 152d-48
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes   The module just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152d-49" on page 183.

Step 152d-49
Have all the modules listed in "Step 152d-42" on page 181 been reinstalled?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152d-45" on page 182.

Step 152d-50
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152d-51
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152d-52".

No   Call for support.

Step 152d-52
Attention: Before replacing the system backplane, call for support.

Replace the system backplane, at location U1.18-P1.

Step 152d-53
Turn on the power.

Step 152d-54
Did the system stop with the same error code as recorded in "Step 152d-1" on page 176?

Yes   Go to "Step 152d-55".

No   The system backplane was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152d-55
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152d-56
Has the system backplane been replaced?

Yes   Call for support.

No   Go to "Step 152d-52".

MAP 152e: 1.5 V CPU Current/Voltage Problem in Processor Subsystem

Step 152e-1
Record the error code and the location code(s) that sent you to this MAP.

Step 152e-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152e-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152e-4".

No   Call for support.

Step 152e-4
Pull out the following books about 25 mm (1 inch), if present:
- Capacitor book, at location U1.18-P1-V3
- Capacitor book, at location U1.18-P1-V7

Step 152e-5
Turn on the power.

Step 152e-6
Did the system stop with the same error code as recorded in "Step 152e-1"?

Yes   Go to "Step 152e-12" on page 185.

No   Go to "Step 152e-7".

Step 152e-7
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152e-8
Reinsert one of the books that is pulled out and listed in "Step 152e-4".

Step 152e-9
Turn on the power.

Step 152e-10
Did the system stop with the same error code as recorded in "Step 152e-1" on page 184?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152e-11".

Step 152e-11
Have all the books listed in "Step 152e-4" on page 184 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152e-8" on page 184.

Step 152e-12
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152e-13
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152e-14".

No   Call for support.

Step 152e-14
Replace the books in the following list, if present, one at a time and in the order listed:
- DCA 1, at location U1.18-P1-V1
- DCA 2, at location U1.18-P1-V2
- DCA 3, at location U1.18-P1-V4
- DCA 4, at location U1.18-P1-V5
- DCA 5, at location U1.18-P1-V6
- DCA 6, at location U1.18-P1-V8

Step 152e-15
Turn on the power.

Step 152e-16
Did the system stop with the same error code as recorded in "Step 152e-1" on page 184?

Yes   Go to "Step 152e-17".

No   The book just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 152e-17
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152e-18
Remove the new book that was just installed in "Step 152e-14" on page 185 and reinstall the original book.

Step 152e-19
Have all the books listed in "Step 152e-14" on page 185 been replaced with new or original books?

Yes   Go to "Step 152e-20".

No   Go to "Step 152e-14" on page 185.

Step 152e-20
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152e-21
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152e-22".

No   Call for support.

Step 152e-22
Attention: Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.

Record the location of each installed MCM module.

Attention: MCM modules have a limit of three plug cycles. Before replacing any of the MCMs in the following list, call for support.

Record the original location on each MCM. Remove the following MCM modules, if present:
- MCM module 0, at location U1.18-P1-C1
- MCM module 3, at location U1.18-P1-C2
- MCM module 1, at location U1.18-P1-C3
- MCM module 2, at location U1.18-P1-C4

Step 152e-23
Turn on the power.

Step 152e-24
Did the system stop with the same error code as recorded in "Step 152e-1" on page 184?

Yes   Go to "Step 152e-30" on page 188.

No   Go to "Step 152e-25".

Step 152e-25
One of the modules just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152e-26
Attention: Before you remove or replace any MCM or L3 module, *stop, read, and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.

Reinstall one of the MCM modules that is removed and listed in "Step 152e-22" on page 186.

Step 152e-27
Turn on the power.

Step 152e-28
Did the system stop with the same error code as recorded in "Step 152e-1" on page 184?

Yes   The module just reinserted was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152e-29".

Step 152e-29
Have all the modules listed in "Step 152e-22" on page 186 been reinstalled?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152e-25".

Step 152e-30
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152e-31
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152e-32".

No   Call for support.

Step 152e-32
Attention: Before replacing the system backplane, call for support.

Replace the system backplane, at location U1.18-P1.

Step 152e-33
Turn on the power.

Step 152e-34
Did the system stop with the same error code as recorded in "Step 152e-1" on page 184?

Yes   Go to "Step 152e-35".

No   The system backplane was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 152e-35
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152e-36
Has the system backplane been replaced?

Yes   Call for support.

No   Go to "Step 152e-32".

MAP 152f: 3.3 V Current/Voltage Problem in Processor Subsystem

Step 152f-1

Record the error code and the location code(s) that sent you to this MAP.

Step 152f-2

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152f-3

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152f-4".

No   Call for support.

Step 152f-4

Pull out the following books about 25 mm (1 inch), if present:

- Memory book 0, at location U1.18-P1-M2
- Memory book 1, at location U1.18-P1-M3
- Memory book 2, at location U1.18-P1-M7
- Memory book 3, at location U1.18-P1-M6

Step 152f-5

Turn on the power.

Step 152f-6

Did the system stop with the same error code as recorded in "Step 152f-1"?

Yes   Go to "Step 152f-12" on page 190.

No   Go to "Step 152f-7".

Step 152f-7

One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152f-8

Reinsert one of the books that is pulled out and listed in "Step 152f-4".

Step 152f-9

Turn on the power.

Step 152f-10

Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152f-11".

Step 152f-11

Have all the books listed in "Step 152f-4" on page 189 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152f-8" on page 189.

Step 152f-12

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152f-13

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152f-14".

No   Call for support.

Step 152f-14

Pull out the following books about 25 mm (1 inch), if present:

- Memory book 4, at location U1.18-P1-M4
- Memory book 5, at location U1.18-P1-M8
- Memory book 6, at location U1.18-P1-M5
- Memory book 7, at location U1.18-P1-M1

Step 152f-15

Turn on the power.

Step 152f-16
Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes Go to "Step 152f-22".

No Go to "Step 152f-17".

Step 152f-17
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152f-18
Reinsert one of the books that is pulled out and listed in "Step 152f-14" on page 190.

Step 152f-19
Turn on the power.

Step 152f-20
Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes The book just reinserted is defective. Replace it. **This ends the procedure**.

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152f-21".

Step 152f-21
Have all the books listed in "Step 152f-14" on page 190 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152f-18".

Step 152f-22
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152f-23
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152f-24".

No   Call for support.

Step 152f-24
Pull out the following books about 25 mm (1 inch), if present:
- Secondary I/O book, at location U1.18-P1-H3
- Third I/O book, at location U1.18-P1-H4

Step 152f-25
Turn on the power.

Step 152f-26
Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   Go to "Step 152f-32" on page 193.

No   Go to "Step 152f-27".

Step 152f-27
The book just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152f-28
Reinsert the book that is pulled out and listed in "Step 152f-24".

Step 152f-29
Turn on the power.

Step 152f-30
Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

          Return the system to its original configuration.

          Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152f-31" on page 193.

Step 152f-31
Have all the books listed in "Step 152f-24" on page 192 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152f-28" on page 192.

Step 152f-32
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152f-33
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152f-34".

No   Call for support.

Step 152f-34
Replace the books in the following list, if present, one at a time and in the order listed:
*   Primary I/O book, at location U1.18-P1-H2
*   DCA 1-RH, at location U1.18-P1-V1
*   DCA 2-RH, at location U1.18-P1-V2
*   DCA 3-RH, at location U1.18-P1-V4
*   DCA 4-RH, at location U1.18-P1-V5
*   DCA 5-RH, at location U1.18-P1-V6
*   DCA 6-RH, at location U1.18-P1-V8

Step 152f-35
Turn on the power.

Step 152f-36
Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   Go to "Step 152f-37".

No   The book just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152f-37
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152f-38
Remove the new book that was just installed in "Step 152f-34" and reinstall the original book.

Step 152f-39
Have all the books listed in "Step 152f-34" been replaced with new or original books?

Yes   Go to "Step 152f-40" on page 194.

No   Go to "Step 152f-34".

Step 152f-40
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152f-41
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152f-42".

No   Call for support.

Step 152f-42
Remove the system clock card, at location U1.18-P1-X5.

Step 152f-43
Turn on the power.

Step 152f-44
Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   Go to "Step 152f-50" on page 195.

No   Go to "Step 152f-45".

Step 152f-45
The system clock card is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152f-46
Reinstall the system clock card that you removed in "Step 152f-42".

Step 152f-47

Turn on the power.

Step 152f-48

Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   The system clock card just reinserted is defective, replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152f-49".

Step 152f-49

Have all the modules listed in "Step 152f-42" on page 194 been reinstalled?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152f-45" on page 194.

Step 152f-50

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152f-51

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152f-52".

No   Call for support.

Step 152f-52

Attention: Before replacing the system backplane, call for support.

Replace the system backplane, at location U1.18-P1.

Step 152f-53

Turn on the power.

Step 152f-54

Did the system stop with the same error code as recorded in "Step 152f-1" on page 189?

Yes   Go to "Step 152f-55".

No   The system backplane was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152f-55

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152f-56

Has the system backplane been replaced?

Yes   Call for support.

No   Go to "Step 152f-52" on page 195.

MAP 152g: 5.0 V Current/Voltage Problem in Processor Subsystem

Step 152g-1

For future reference, record the error code and the location code(s) that sent you to this MAP.

Step 152g-2

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152g-3

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152g-4".

No Call for support.

Step 152g-4

Pull out the following books about 25 mm (1 inch), if present:

- Memory book 0, at location U1.18-P1-M2
- Memory book 1, at location U1.18-P1-M3
- Memory book 2, at location U1.18-P1-M7
- Memory book 3, at location U1.18-P1-M6

Step 152g-5

Turn on the power.

Step 152g-6

Did the system stop with the same error code as recorded in "Step 152g-1"?

Yes Go to "Step 152g-12" on page 198.

No Go to "Step 152g-7".

Step 152g-7

One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152g-8

Reinsert one of the books that is pulled out and listed in "Step 152g-4".

Step 152g-9

Turn on the power.

Step 152g-10
Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152g-11".

Step 152g-11
Have all the books listed in "Step 152g-4" on page 197 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152g-8" on page 197.

Step 152g-12
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152g-13
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152g-14".

No   Call for support.

Step 152g-14
Pull out the following books about 25 mm (1 inch), if present:
- Memory book 4, at location U1.18-P1-M4
- Memory book 5, at location U1.18-P1-M8
- Memory book 6, at location U1.18-P1-M5
- Memory book 7, at location U1.18-P1-M1

Step 152g-15
Turn on the power.

Step 152g-16
Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes   Go to "Step 152g-22".

No   Go to "Step 152g-17".

Step 152g-17
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152g-18
Reinsert one of the books that is pulled out and listed in "Step 152g-14" on page 198.

Step 152g-19
Turn on the power.

Step 152g-20
Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152g-21".

Step 152g-21
Have all the books listed in "Step 152g-14" on page 198 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152g-18".

Step 152g-22
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152g-23
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152g-24".

No   Call for support.

Step 152g-24
Pull out the following books about 25 mm (1 inch), if present:
- Secondary I/O book, at location U1.18-P1-H3
- Third I/O book, at location U1.18-P1-H4
- Cap card at U1.18-P1-V3
- Cap card at U1.18-P1-V7

Step 152g-25
Turn on the power.

Step 152g-26
Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes   Go to "Step 152g-32" on page 201.

No   Go to "Step 152g-27".

Step 152g-27
One of the books just removed is defective.

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152g-28
Reinsert one of the books that is pulled out and listed in "Step 152g-24".

Step 152g-29
Turn on the power.

Step 152g-30
Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes   The book just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152g-31" on page 201.

Step 152g-31
Have all the books listed in "Step 152g-24" on page 200 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152g-28" on page 200.

Step 152g-32
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152g-33
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 152g-34".

No   Call for support.

Step 152g-34
Replace the book in the following list, if present, one at a time and in the order listed:
- Primary I/O book, at location U1.18-P1-H2
- DCA 1-RH at U1.18-P1-V1
- DCA 2-RH at U1.18-P1-V2

Step 152g-35
Turn on the power.

Step 152g-36
Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes   Go to "Step 152g-37".

No   The book just replaced was defective. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152g-37
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152g-38

Remove the new book that was just installed in "Step 152g-34" on page 201 and reinstall the original book.

Step 152g-39

Have all the books listed in "Step 152g-34" on page 201 been replaced with new or original books?

Yes Go to "Step 152g-40".

No Go to "Step 152g-34" on page 201.

Step 152g-40

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 152g-41

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 152g-42".

No Call for support.

Step 152g-42

Attention: Before replacing the system backplane, call for support.

Replace the system backplane, at location U1.18-P1.

Step 152g-43

Turn on the power.

Step 152g-44

Did the system stop with the same error code as recorded in "Step 152g-1" on page 197?

Yes Go to "Step 152g-45".

No The system backplane was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152g-45

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 152g-46
Has the system backplane been replaced?

Yes   Call for support.

No   Go to "Step 152g-42" on page 202.

MAP 152h: 3.3V Current/Voltage Problem in I/O Subsystem

Step 152h-1

Record the error code and the location code(s) that sent you to this MAP.

Step 152h-2

Determine the I/O subsystem number from the error code (10yy xxxx) and the following list. The remaining steps of this map refer to this I/O subsystem:
* If yy=14, I/O subsystem number is 1, location is U1.9
* If yy=15, I/O subsystem number is 2, location is U1.5
* If yy=16, I/O subsystem number is 3, location is U1.1
* If yy=17, I/O subsystem number is 4, location is U1.13
* If yy=21, I/O subsystem number is 5, location is U2.1
* If yy=22, I/O subsystem number is 6, location is U2.5
* If yy=23, I/O subsystem number is 4, location is U2.9
* If yy=24, I/O subsystem number is 7, location is U2.13
* If yy=25, I/O subsystem number is 8, location is U2.19

Step 152h-3

Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152h-4

Are all green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152h-5".

No   Call for support.

Step 152h-5

Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
* Adapter card at P1-I1
* Adapter card at P1-I2
* Adapter card at P1-I3
* Adapter card at P1-I4
* Adapter card at P1-I5

Step 152h-6

Turn on the power.

Step 152h-7

Did the system stop with the same error code as recorded in "Step 152h-1"?

Yes   Go to "Step 152h-13" on page 205.

No   Go to "Step 152h-8" on page 205.

Step 152h-8

One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152h-9

Reinsert one of the cards that is removed and listed in "Step 152h-5" on page 204.

Step 152h-10

Turn on the power.

Step 152h-11

Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-12".

Step 152h-12

Have all the cards listed in "Step 152h-5" on page 204 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-9".

Step 152h-13

Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152h-14

Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152h-15" on page 206.

No   Call for support.

Step 152h-15
Remove the following adapter cards, if present, from the I/O subsystem. record the adapter locations:
* Adapter card at P1-I6
* Adapter card at P1-I7
* Adapter card at P1-I8
* Adapter card at P1-I9
* Adapter card at P1-I10

Step 152h-16
Turn on the power.

Step 152h-17
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   Go to "Step 152h-23" on page 207.

No   Go to "Step 152h-18".

Step 152h-18
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152h-19
Reinsert one of the cards that is removed and listed in "Step 152h-15".

Step 152h-20
Turn on the power.

Step 152h-21
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-22" on page 207.

Step 152h-22
Have all the cards listed in "Step 152h-15" on page 206 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152h-19" on page 206.

Step 152h-23
Turn off the power.

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152h-24
Are all the green "power good out" LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152h-25".

No Call for support.

Step 152h-25
Remove the following adapter cards, if present, from the I/O subsystem. record the adapter locations:
- Adapter card at P2-I1
- Adapter card at P2-I2
- Adapter card at P2-I3
- Adapter card at P2-I4
- Adapter card at P2-I5

Step 152h-26
Turn on the power.

Step 152h-27
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes Go to "Step 152h-33" on page 208.

No Go to "Step 152h-28".

Step 152h-28
One of the cards just removed is defective.

Turn off the power.

Make sure all the green "power good out" LEDs of both I/O subsystem DCAs are off.

Step 152h-29
Reinsert one of the cards that is removed and listed in "Step 152h-25".

Step 152h-30
Turn on the power.

Step 152h-31
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-32".

Step 152h-32
Have all the cards listed in "Step 152h-25" on page 207 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-29" on page 207.

Step 152h-33
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152h-34
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152h-35".

No   Call for support.

Step 152h-35
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P2-I6
- Adapter card at P2-I7
- Adapter card at P2-I8
- Adapter card at P2-I9
- Adapter card at P2-I10

Step 152h-36
Turn on the power.

Step 152h-37
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   Go to "Step 152h-43".

No   Go to "Step 152h-38".

Step 152h-38
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152h-39
Reinsert one of the cards that is removed and listed in "Step 152h-35" on page 208.

Step 152h-40
Turn on the power.

Step 152h-41
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-42".

Step 152h-42
Have all the cards listed in "Step 152h-35" on page 208 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152h-39".

Step 152h-43
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152h-44
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152h-45".

No   Call for support.

Step 152h-45
Replace the DCAs in the following list, one at a time and in the order listed:
* DCA 1 at V1
* DCA 2 at V2

Step 152h-46
Turn on the power.

Step 152h-47
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   Go to "Step 152h-48".

No   The DCA just replaced is defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152h-48
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152h-49
Remove the new DCA that was just installed in "Step 152h-45" and reinstall the original DCA.

Step 152h-50
Have all the DCAs listed in "Step 152h-45" been replaced with new or original cards?

Yes   Go to "Step 152h-51"

No   Go to "Step 152h-45".

Step 152h-51
Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152h-52
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152h-53".

No   Call for support.

Step 152h-53
Replace the parts in the following list, one at a time and in the order listed:
- I/O subsystem backplane at P1
- I/O subsystem backplane at P2

Step 152h-54
Turn on the power.

Step 152h-55
Did the system stop with the same error code as recorded in "Step 152h-1" on page 204?

Yes   Go to "Step 152h-56".

No   The part just replaced is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152h-56
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152h-57
Have all the cards listed in "Step 152h-53" been replaced with new or original cards?

Yes   Call for support.

No   Go to "Step 152h-53".

MAP 152i: 5.0 V Current/Voltage Problem in I/O Subsystem

Step 152i-1
Record the error code and location code(s) that sent you to this MAP.

Step 152i-2
Determine the I/O subsystem number from the error code (10yy xxxx) and the following list. The remaining steps of this map refer to this I/O subsystem:
- If yy=14, I/O subsystem number is 1, location is U1.9
- If yy=15, I/O subsystem number is 2, location is U1.5
- If yy=16, I/O subsystem number is 3, location is U1.1
- If yy=17, I/O subsystem number is 4, location is U1.13
- If yy=21, I/O subsystem number is 5, location is U2.1
- If yy=22, I/O subsystem number is 6, location is U2.5
- If yy=23, I/O subsystem number is 4, location is U2.9
- If yy=24, I/O subsystem number is 7, location is U2.13
- If yy=25, I/O subsystem number is 8, location is U2.19

Step 152i-3
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152i-4
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152i-5".

No   Call for support.

Step 152i-5
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P1-I1
- Adapter card at P1-I2
- Adapter card at P1-I3
- Adapter card at P1-I4
- Adapter card at P1-I5

Step 152i-6
Turn on the power.

Step 152i-7
Did the system stop with the same error code as recorded in "Step 152i-1"?

Yes   Go to "Step 152i-13" on page 213.

No   Go to "Step 152i-8".

Step 152i-8
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152i-9
Reinsert one of the cards that is removed and listed in "Step 152i-5".

Step 152i-10
Turn on the power.

Step 152i-11
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152i-12".

Step 152i-12
Have all the cards listed in "Step 152i-5" on page 212 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152i-9" on page 212.

Step 152i-13
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152i-14
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152i-15".

No   Call for support.

Step 152i-15
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
* Adapter card at P1-I6
* Adapter card at P1-I7
* Adapter card at P1-I8
* Adapter card at P1-I9
* Adapter card at P1-I10

Step 152i-16
Turn on the power.

Step 152i-17
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes   Go to ″Step 152i-23″ on page 214.

No   Go to "Step 152i-18".

Step 152i-18
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152i-19
Reinsert one of the cards that is removed and listed in "Step 152i-15".

Step 152i-20
Turn on the power.

Step 152i-21
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to *"MAP 0410: Repair Checkout"* in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152i-22".

Step 152i-22
Have all the cards listed in "Step 152i-15" on page 213 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to *"MAP 0410: Repair Checkout"* in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152i-19" on page 213.

Step 152i-23
Turn off the power.

Examine all the green *"power good out"* LEDs of both I/O subsystem DCAs.

Step 152i-24
Are all the green *"power good out"* LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152i-25".

No Call for support.

Step 152i-25
Remove the following adapter cards, if present, from the I/O subsystem. record the adapter locations:
- Adapter card at P2-I1
- Adapter card at P2-I2
- Adapter card at P2-I3
- Adapter card at P2-I4
- Adapter card at P2-I5

Step 152i-26
Turn on the power.

Step 152i-27
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes Go to *"Step 152i-33"* on page 215.

No Go to "Step 152i-28".

Step 152i-28
One of the cards just removed is defective.

Turn off the power.

Make sure all the green *"power good out"* LEDs of both I/O subsystem DCAs are off.

Step 152i-29
Reinsert one of the cards that is removed and listed in "Step 152i-25".

Step 152i-30
Turn on the power.

Step 152i-31
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152i-32".

Step 152i-32
Have all the cards listed in "Step 152i-25" on page 214 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152i-29" on page 214.

Step 152i-33
Turn off the power.

Examine all the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152i-34
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152i-35".

No   Call for support.

Step 152i-35
Remove the following adapter cards, if present, from the I/O subsystem. record the adapter locations:
* Adapter card at P2-I6
* Adapter card at P2-I7
* Adapter card at P2-I8
* Adapter card at P2-I9
* Adapter card at P2-I10

Step 152i-36
Turn on the power.

Step 152i-37
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes Go to "Step 152i-43".

No Go to "Step 152i-38".

Step 152i-38
One of the cards just removed is defective.

Turn off the power.

Make sure all the green "power good out" LEDs of both I/O subsystem DCAs are off.

Step 152i-39
Reinsert one of the cards that is removed and listed in "Step 152i-35" on page 215.

Step 152i-40
Turn on the power.

Step 152i-41
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152i-42".

Step 152i-42
Have all the cards listed in "Step 152i-35" on page 215 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152i-39".

Step 152i-43
Turn off the power.

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152i-44
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes　　Go to "Step 152i-45".

No　　Call for support.

Step 152i-45
Remove the following DASD 4-packs, if present, from the I/O subsystem. Record the DASD locations:
- DASD 4-pack at P3
- DASD 4-pack at P4
- DASD 4-pack at P5
- DASD 4-pack at P6

Step 152i-46
Turn on the power.

Step 152i-47
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes　　Go to "Step 152i-53" on page 218.

No　　Go to "Step 152i-48".

Step 152i-48
One of the DASDs just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152i-49
Reinsert one of the DASD 4-packs that is removed and listed in "Step 152i-45".

Step 152i-50
Turn on the power.

Step 152i-51
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes　　One of the DASD in the DASD 4-pack just reinserted is defective. Replace it. **This ends the procedure.**

　　　　Return the system to its original configuration.

　　　　Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No　　Go to "Step 152i-52" on page 218.

Step 152i-52
Have all the cards listed in "Step 152i-45" on page 217 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152i-49" on page 217.

Step 152i-53
Turn off the power.

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152i-54
Are all the green "power good out" LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152i-55".

No Call for support.

Step 152i-55
Replace the books in the following list one at a time and in the order listed:
- DCA 1 at V1
- DCA 2 at V2

Step 152i-56
Turn on the power.

Step 152i-57
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes Go to "Step 152i-58".

No The book just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 152i-58
Turn off the power.

Make sure all the green "power good out" LEDs of both I/O subsystem DCAs are off.

Step 152i-59
Remove the new card that was just installed in "Step 152i-55" and reinstall the original card.

Step 152i-60
Have all the cards listed in "Step 152i-55" on page 218 been replaced with new or original cards?

Yes   Go to "Step 152i-61".

No   Go to "Step 152i-55" on page 218.

Step 152i-61
Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152i-62
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152i-63".

No   Call for support.

Step 152i-63
Replace the parts in the following list one at a time and in the order listed:
- I/O subsystem backplane at P1
- I/O subsystem backplane at P2

Step 152i-64
Turn on the power.

Step 152i-65
Did the system stop with the same error code as recorded in "Step 152i-1" on page 212?

Yes   Go to "Step 152i-66".

No   The card just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152i-66
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152i-67
Have all the cards listed in "Step 152i-63" been replaced?

Yes   Call for support.

No   Go to "Step 152i-63".

MAP 152j: 2.5 V Current/Voltage Problem in I/O Subsystem

Step 152j-1
Record the error code and location code(s) that sent you to this MAP.

Step 152j-2
Determine the I/O subsystem number from the error code (10yy xxxx) and the following list. The remaining steps of this map refer to this I/O subsystem:
- If yy=14, I/O subsystem number is 1, location is U1.9
- If yy=15, I/O subsystem number is 2, location is U1.5
- If yy=16, I/O subsystem number is 3, location is U1.1
- If yy=17, I/O subsystem number is 4, location is U1.13
- If yy=21, I/O subsystem number is 5, location is U2.1
- If yy=22, I/O subsystem number is 6, location is U2.5
- If yy=23, I/O subsystem number is 4, location is U2.9
- If yy=24, I/O subsystem number is 7, location is U2.13
- If yy=25, I/O subsystem number is 8, location is U2.19

Step 152j-3
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152j-4
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152j-5".

No   Call for support.

Step 152j-5
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P1-I1
- Adapter card at P1-I2
- Adapter card at P1-I3
- Adapter card at P1-I4
- Adapter card at P1-I5

Step 152j-6
Turn on the power.

Step 152j-7
Did the system stop with the same error code as recorded in "Step 152j-1"?

Yes   Go to "Step 152j-13" on page 221.

No   Go to "Step 152j-8" on page 221.

Step 152j-8
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152j-9
Reinsert one of the cards that is removed and listed in "Step 152j-5" on page 220.

Step 152j-10
Turn on the power.

Step 152j-11
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152j-12".

Step 152j-12
Have all the cards listed in "Step 152j-5" on page 220 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152j-9".

Step 152j-13
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152j-14
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152j-15" on page 222.

No   Call for support.

Step 152j-15
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
* Adapter card at P1-I6
* Adapter card at P1-I7
* Adapter card at P1-I8
* Adapter card at P1-I9
* Adapter card at P1-I10

Step 152j-16
Turn on the power.

Step 152j-17
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes   Go to "Step 152j-23" on page 223.

No   Go to "Step 152j-18".

Step 152j-18
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152j-19
Reinsert one of the cards that is removed and listed in "Step 152j-15".

Step 152j-20
Turn on the power.

Step 152j-21
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes   The card just reinserted is defective. Replace it.**This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152j-22" on page 223.

Step 152j-22
Have all the cards listed in "Step 152j-15" on page 222 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

           Return the system to its original configuration.

           Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152j-19" on page 222.

Step 152j-23
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152j-24
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152j-25".

No   Call for support.

Step 152j-25
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
* Adapter card at P2-I1
* Adapter card at P2-I2
* Adapter card at P2-I3
* Adapter card at P2-I4
* Adapter card at P2-I5

Step 152j-26
Turn on the power.

Step 152j-27
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes   Go to "Step 152j-33" on page 224.

No   Go to "Step 152j-28".

Step 152j-28
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152j-29
Reinsert one of the cards that is removed and listed in "Step 152j-25".

Step 152j-30
Turn on the power.

Step 152j-31
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152j-32".

Step 152j-32
Have all the cards listed in "Step 152j-25" on page 223 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152j-29" on page 223.

Step 152j-33
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152j-34
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152j-35".

No Call for support.

Step 152j-35
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
* Adapter card at P2-I6
* Adapter card at P2-I7
* Adapter card at P2-I8
* Adapter card at P2-I9
* Adapter card at P2-I10

Step 152j-36
Turn on the power.

Step 152j-37
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes Go to "Step 152j-43".

No Go to "Step 152j-38".

Step 152j-38
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152j-39
Reinsert one of the cards that is removed and listed in "Step 152j-35" on page 224.

Step 152j-40
Turn on the power.

Step 152j-41
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152j-42".

Step 152j-42
Have all the cards listed in "Step 152j-35" on page 224 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152j-39".

Step 152j-43
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152j-44
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152j-45".

No   Call for support.

Step 152j-45
Replace the cards in the following list one at a time and in the order listed:
* DCA 1 at V1
* DCA 2 at V2

Step 152j-46
Turn on the power.

Step 152j-47
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes   Go to "Step 152j-48".

No   The card just replaced is defective. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152j-48
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152j-49
Remove the new card that was just installed in "Step 152j-45" and reinstall the original card.

Step 152j-50
Have all the cards listed in "Step 152j-45" been replaced with new or original cards?

Yes   Go to "Step 152j-51"

No   Go to "Step 152j-45".

Step 152j-51
Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152j-52
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152j-53".

No   Call for support.

Step 152j-53
Replace the parts in the following list one at a time and in the order listed:
- I/O subsystem backplane at P1
- I/O subsystem backplane at P2

Step 152j-54
Turn on the power.

Step 152j-55
Did the system stop with the same error code as recorded in "Step 152j-1" on page 220?

Yes   Go to "Step 152j-56".

No   The part just replaced is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152j-56
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152j-57
Have all the cards listed in "Step 152j-53" been replaced with new or original cards?

Yes   Call for support.

No   Go to "Step 152j-53".

MAP 152k: 12.0 V Current/Voltage Problem in I/O Subsystem

Step 152k-1
Record the error code and location code(s) that sent you to this MAP.

Step 152k-2
Determine the I/O subsystem number from the error code (10yy xxxx) and the following list. The remaining steps of this map refer to this I/O subsystem:
- If yy=14, I/O subsystem number is 1, location is U1.9
- If yy=15, I/O subsystem number is 2, location is U1.5
- If yy=16, I/O subsystem number is 3, location is U1.1
- If yy=17, I/O subsystem number is 4, location is U1.13
- If yy=21, I/O subsystem number is 5, location is U2.1
- If yy=22, I/O subsystem number is 6, location is U2.5
- If yy=23, I/O subsystem number is 4, location is U2.9
- If yy=24, I/O subsystem number is 7, location is U2.13
- If yy=25, I/O subsystem number is 8, location is U2.19

Step 152k-3
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152k-4
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152k-5".

No   Call for support.

Step 152k-5
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P1-I1
- Adapter card at P1-I2
- Adapter card at P1-I3
- Adapter card at P1-I4
- Adapter card at P1-I5

Step 152k-6
Turn on the power.

Step 152k-7
Did the system stop with the same error code as recorded in "Step 152k-1"?

Yes   Go to "Step 152k-13" on page 229.

No   Go to "Step 152k-8" on page 229.

Step 152k-8

One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152k-9

Reinsert one of the cards that is removed and listed in "Step 152k-5" on page 228.

Step 152k-10

Turn on the power.

Step 152k-11

Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152k-12".

Step 152k-12

Have all the cards listed in "Step 152k-5" on page 228 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152k-9".

Step 152k-13

Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152k-14

Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152k-15" on page 230.

No Call for support.

Step 152k-15

Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P1-I6
- Adapter card at P1-I7
- Adapter card at P1-I8
- Adapter card at P1-I9
- Adapter card at P1-I10

Step 152k-16

Turn on the power.

Step 152k-17

Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes Go to "Step 152k-23" on page 231.

No Go to "Step 152k-18".

Step 152k-18

One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152k-19

Reinsert one of the cards that is removed and listed in "Step 152k-15".

Step 152k-20

Turn on the power.

Step 152k-21

Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152k-22" on page 231.

Step 152k-22
Have all the cards listed in "Step 152k-15" on page 230 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152k-19" on page 230.

Step 152k-23
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152k-24
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152k-25".

No   Call for support.

Step 152k-25
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P2-I1
- Adapter card at P2-I2
- Adapter card at P2-I3
- Adapter card at P2-I4
- Adapter card at P2-I5

Step 152k-26
Turn on the power.

Step 152k-27
Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes   Go to "Step 152k-33" on page 232.

No   Go to "Step 152k-28".

Step 152k-28
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152k-29
Reinsert one of the cards that is removed and listed in "Step 152k-25".

Step 152k-30
Turn on the power.

Step 152k-31
Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152k-32" on page 232.

Step 152k-32

Have all the cards listed in "Step 152k-25" on page 231 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152k-29" on page 231.

Step 152k-33

Turn off the power.

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152k-34

Are all the green "power good out" LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152k-35".

No Call for support.

Step 152k-35

Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
• Adapter card at P2-I6
• Adapter card at P2-I7
• Adapter card at P2-I8
• Adapter card at P2-I9
• Adapter card at P2-I10

Step 152k-36

Turn on the power.

Step 152k-37

Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes Go to "Step 152k-43" on page 233.

No Go to "Step 152k-38".

Step 152k-38

One of the cards just removed is defective.

Turn off the power.

Make sure all the green "power good out" LEDs of both I/O subsystem DCAs are off.

Step 152k-39

Reinsert one of the cards that is removed and listed in "Step 152k-35".

Step 152k-40

Turn on the power.

Step 152k-41

Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152k-42" on page 233.

Step 152k-42
Have all the cards listed in "Step 152k-35" on page 232 been reinserted?

Yes The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

No Go to "Step 152k-39" on page 232.

Step 152k-43
Turn off the power.

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152k-44
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152k-45".

No   Call for support.

Step 152k-45
Remove the following DASD 4-packs, if present, from the I/O subsystem. Record the DASD locations:
*   DASD 4-pack at P3
*   DASD 4-pack at P4
*   DASD 4-pack at P5
*   DASD 4-pack at P6

Step 152k-46
Turn on the power.

Step 152k-47
Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes   Go to "Step 152k-53" on page 235.

No   Go to "Step 152k-48".

Step 152k-48
One of the DASDs just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152k-49
Reinsert one of the DASD 4-packs that is removed and listed in "Step 152k-45".

Step 152k-50
Turn on the power.

Step 152k-51
Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes   One of the DASD in the DASD 4-pack just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152k-52" on page 235.

Step 152k-52
Have all the cards listed in "Step 152k-45" on page 234 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152k-49" on page 234.

Step 152k-53
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152k-54
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152k-55".

No   Call for support.

Step 152k-55
Replace the books in the following list one at a time and in the order listed:
- DCA 1 at V1
- DCA 2 at V2

Step 152k-56
Turn on the power.

Step 152k-57
Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes   Go to "Step 152k-58".

No   The part just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152k-58
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152k-59
Remove the new card that was just installed in "Step 152k-55" and reinstall the original card.

Step 152k-60
Have all the cards listed in "Step 152k-55" been replaced with new or original cards?

Yes   Go to "Step 152k-61".

No   Go to "Step 152k-55".

Step 152k-61
Examine the the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152k-62
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152k-63" on page 236.

No   Call for support.

Step 152k-63
Replace the parts in the following list one at a time and in the order listed:
- I/O subsystem backplane at P1
- I/O subsystem backplane at P2

Step 152k-64
Turn on the power.

Step 152k-65
Did the system stop with the same error code as recorded in "Step 152k-1" on page 228?

Yes   Go to "Step 152k-66".

No   The card just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 152k-66
Turn off the power.

Make sure all the green "power good out" LEDs of both I/O subsystem DCAs are off.

Step 152k-67
Have all the cards listed in "Step 152k-63" been replaced?

Yes   Call for support.

No   Go to "Step 152k-63".

MAP 152l: -12.0V Current/Voltage Problem in I/O Subsystem

Step 152l-1
Record the error code and location code(s) that sent you to this MAP.

Step 152l-2
Determine the I/O subsystem number from the error code (10yy xxxx) and the following list. The remaining steps of this map refer to this I/O subsystem:
- If yy=14, I/O subsystem number is 1, location is U1.9
- If yy=15, I/O subsystem number is 2, location is U1.5
- If yy=16, I/O subsystem number is 3, location is U1.1
- If yy=17, I/O subsystem number is 4, location is U1.13
- If yy=21, I/O subsystem number is 5, location is U2.1
- If yy=22, I/O subsystem number is 6, location is U2.5
- If yy=23, I/O subsystem number is 4, location is U2.9
- If yy=24, I/O subsystem number is 7, location is U2.13
- If yy=25, I/O subsystem number is 8, location is U2.19

Step 152l-3
Turn off the power.

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152l-4
Are all the green "power good out" LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152l-5" on page 237.

No   Call for support.

Step 152I-5
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P1-I1
- Adapter card at P1-I2
- Adapter card at P1-I3
- Adapter card at P1-I4
- Adapter card at P1-I5

Step 152I-6
Turn on the power.

Step 152I-7
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   Go to "Step 152I-13".

No   Go to "Step 152I-8".

Step 152I-8
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152I-9
Reinsert one of the cards that is removed and listed in "Step 152I-5".

Step 152I-10
Turn on the power.

Step 152I-11
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

   Return the system to its original configuration.

   Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152I-12".

Step 152I-12
Have all the cards listed in "Step 152I-5" been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

   Return the system to its original configuration.

   Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152I-9".

Step 152I-13
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152I-14
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152I-15" on page 238.

No   Call for support.

Step 152I-15
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P1-I6
- Adapter card at P1-I7
- Adapter card at P1-I8
- Adapter card at P1-I9
- Adapter card at P1-I10

Step 152I-16
Turn on the power.

Step 152I-17
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   Go to "Step 152I-23".

No   Go to "Step 152I-18".

Step 152I-18
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152I-19
Reinsert one of the cards that is removed and listed in "Step 152I-15".

Step 152I-20
Turn on the power.

Step 152I-21
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

   Return the system to its original configuration.

   Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152I-22".

Step 152I-22
Have all the cards listed in "Step 152I-15" been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

   Return the system to its original configuration.

   Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152I-19".

Step 152I-23
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152I-24
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152I-25" on page 239.

No   Call for support.

Step 152I-25
Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
* Adapter card at P2-I1
* Adapter card at P2-I2
* Adapter card at P2-I3
* Adapter card at P2-I4
* Adapter card at P2-I5

Step 152I-26
Turn on the power.

Step 152I-27
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   Go to "Step 152I-33" on page 240.

No   Go to "Step 152I-28".

Step 152I-28
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152I-29
Reinsert one of the cards that is removed and listed in "Step 152I-25".

Step 152I-30
Turn on the power.

Step 152I-31

Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152l-32".

Step 152I-32

Have all the cards listed in "Step 152l-25" on page 239 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152l-29" on page 239.

Step 152I-33

Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152I-34

Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152l-35".

No   Call for support.

Step 152I-35

Remove the following adapter cards, if present, from the I/O subsystem. Record the adapter locations:
- Adapter card at P2-I6
- Adapter card at P2-I7
- Adapter card at P2-I8
- Adapter card at P2-I9
- Adapter card at P2-I10

Step 152I-36

Turn on the power.

Step 152I-37
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   Go to "Step 152I-43".

No   Go to "Step 152I-38".

Step 152I-38
One of the cards just removed is defective.

Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152I-39
Reinsert one of the cards that is removed and listed in "Step 152I-35" on page 240.

Step 152I-40
Turn on the power.

Step 152I-41
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   The card just reinserted is defective. Replace it. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152I-42".

Step 152I-42
Have all the cards listed in "Step 152I-35" on page 240 been reinserted?

Yes   The symptom has changed. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152I-39".

Step 152I-43
Turn off the power.

Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152I-44
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152I-45".

No Call for support.

Step 152I-45
Replace the DCAs in the following list one at a time and in the order listed:
• DCA 1 at V1
• DCA 2 at V2

Step 152I-46
Turn on the power.

Step 152I-47
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes Go to "Step 152I-48".

No The DCA just replaced is defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152I-48
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152I-49
Remove the new DCA that was just installed in "Step 152I-45" and reinstall the original DCA.

Step 152I-50
Have all the DCAs listed in "Step 152I-45" been replaced with new or original cards?

Yes Go to "Step 152I-51"

No Go to "Step 152I-45".

Step 152I-51
Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152I-52
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes Go to "Step 152I-53" on page 243.

No Call for support.

Step 152I-53
Replace the parts in the following list one at a time and in the order listed:
- I/O subsystem backplane at P1
- I/O subsystem backplane at P2

Step 152I-54
Turn on the power.

Step 152I-55
Did the system stop with the same error code as recorded in "Step 152I-1" on page 236?

Yes   Go to "Step 152I-56".

No   The part just replaced is defective. Replace it. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152I-56
Turn off the power.

Make sure all the green ″power good out″ LEDs of both I/O subsystem DCAs are off.

Step 152I-57
Have all the cards listed in "Step 152I-53" been replaced with new or original cards?

Yes   Call for support.

No   Go to "Step 152I-53".

MAP 152m: Cable Problem in Power Subsystem

Step 152m-1

Record the error code and location code(s) that sent you to this MAP. You should be supplied with one or two pairs of location codes from the action for the error code in the service guide. These location codes are the ends of the cable or cables in question. The fourth nibble of the error code indicates the side of the power subsystem that detected the failure. For example, 101A indicates side A (front), and 101B indicates side B (rear). The following steps apply to the power subsystem side indicated by the error code recorded. For each location code pair:

1. Generate the first FRU location code (from U1.35) to be replaced by taking the location code given for the action of the error code and truncating the connector ID (/Qx).

2. Generate the second FRU location code to be replaced by taking the location code (not from U1.35) given for the action of the error code and truncating the connector ID (/Qx).

3. Generate the third FRU location code to be replaced (the cable) by taking the location code (from U1.35) given for the action of the error code and appending a # (number sign). For example, the service guide for error code 101A x125 lists the location codes U1.35-P1-X3/Q1 and U1.9-V1/Q2. From the error code, you are working on the A (front) side. From the location codes, the FRUs, in order of replacement, (if required) are:

   a. U1.35-P1-X3 - BPD1

   b. U1.9-V1 - DCA1

   c. U1.35-P1-X3/Q1# - cable

4. If two pairs of location codes (in other words, two cables) were reported by the eror code that sent you to this map, repeat steps 1, 2, and 3 for the other pair of location codes. Assemble the FRU list for both cables as follows:

   a. Cable from first pair of location codes.

   b. Cable from second pair of location codes.

Refer to "AIX and Physical Location Code Reference Tables" on page 54 and "Power Distribution Cabling" on page 30.

Step 152m-2

Press the green **start service** button on the panel with the UEPO switch.

Step 152m-3

From the action column in the ″Error Code to FRU″ table entry for the error code recorded in "Step 152m-1", find the location codes of both ends of the suspect power cable or cables.

Step 152m-4

Examine both ends of the power cable or cables, and make sure each end is properly connected and fully seated.

Step 152m-5

Is the power cable or cables properly connected and seated fully at both ends?

Yes Go to "Step 152m-30" on page 247.

No Go to "Step 152m-29" on page 246.

Step 152m-6

Have you replaced the first FRU in the list of FRUs recorded in "Step 152m-1" in a previous service action?

Yes Go to "Step 152m-18" on page 245.

No Go to "Step 152m-7" on page 245.

Step 152m-7
Is the power-on LED of the first FRU generated from the location codes recorded in "Step 152m-1" on page 244 off?

Yes   Go to "Step 152m-8".

No   Call for support.

Step 152m-8
Replace the first FRU in the list of FRUs recorded in "Step 152m-1" on page 244 with power-on LED off. Press the white **service complete** button on the panel with the UEPO switch after replacement.

Step 152m-9
Does the error code recorded in "Step 152m-1" on page 244 reappear?

Yes   Return the system to its original configuration. Go to "Step 152m-11".

No   Return the system to its original configuration. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152m-10
Press the white **service complete** button on the panel with the UEPO switch.

Step 152m-11
Schedule non-concurrent service with the customer to replace the second FRU in the list of FRUs recorded in "Step 152m-1" on page 244. **This ends the procedure**.

Step 152m-12
Is the power-on LED of the first FRU generated from the location codes recorded in "Step 152m-1" on page 244 off?

Yes   Go to "Step 152m-13".

No   Call for support.

Step 152m-13
Reseat and properly connect the power cable ends, with location codes recorded in "Step 152m-1" on page 244.

Step 152m-14
Set the power-on switches of all BPRs on the same side with the power cable that was not connected properly to the off (right) position.

Step 152m-15
Wait 30 seconds and then turn the power-on switches of the BPRs found in "Step 152m-14" to the on (left) position.

Step 152m-16
Press the white **service complete** button on the panel with the UEPO switch after replacement.

Step 152m-17
Does the error code recorded in "Step 152m-1" on page 244 reappear?

Yes   Go to "Step 152m-2" on page 244.

No   Return the system to its original configuration. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152m-18

Note: The following steps will require the system power to be removed. The operating system must be shut down in all partitions before turning off the power.

Turn off the power. Turn off the UEPO switch. Examine the amber logic-power LEDs of all installed processor subsystem DCAs. Also examine the green ″power good out″ LEDs of all installed I/O subsystem DCAs.

Step 152m-19
Are all amber logic-power LEDs of all installed processor subsystem DCAs and all green ″logic power out″ LEDs of all installed I/O subsystem DCAs off?

Yes   Go to "Step 152m-20".

No   Call for support.

Step 152m-20
Replace the second FRU in the list of FRUs recorded in step "Step 152m-1" on page 244.

Step 152m-21
Turn on the UEPO switch. Turn on the power.

Step 152m-22
Does the error code recorded in "Step 152m-1" on page 244 reappear?

Yes   Go to "Step 152m-23".

No   Return the system to its original configuration. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152m-23
Go to "Step 152m-24".

Step 152m-24
Turn off the power. Turn off the UEPO switch. Examine the amber logic-power LEDs of all installed processor subsystem DCAs. Also examine the green ″power good out″ LEDs of all installed I/O subsystem DCAs.

Step 152m-25
Are all amber logic-power LEDs of all installed processor subsystem DCAs and all green ″logic power out″ LEDs of all installed I/O subsystem DCAs off?

Yes   Go to "Step 152m-26".

No   Call for support.

Step 152m-26
Replace the third FRU in the list of FRUs recorded in step 152m-1.

Step 152m-27
Turn on the UEPO switch. Turn on the power.

Step 152m-28
Does the error code recorded in "Step 152m-1" on page 244 reappear?

Yes   Call for support.

No   Return the system to its original configuration. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 152m-29
Is the error code recorded in "Step 152m-1" on page 244 of the form 101A xxxx or 101B xxxx?

Yes   Go to "Step 152m-12" on page 245.

No   All system partitions must be shut down and the system must be powered off to correct the power cabling. Schedule nonconcurrent service with the customer to correct the power cabling. This ends this procedure.

Step 152m-30
Is the error code recorded in "Step 152m-1" on page 244 of the form 101A xxxx or 101B xxxx?

Yes   Go to "Step 152m-6" on page 244.

No   Verify all power subsystem UPIC connections. Go to "Step 152m-31".

Step 152m-31
Are all power subsystem UPIC connections properly seated and correctly connected?

Yes   Call for support.

No   All system partitions must be shut down and the system must be powered off to correct the power cabling. Schedule nonconcurrent service with the customer to correct the power cabling. This ends this procedure.

MAP 152n: DASD Subsystem Power Problem

Step 152n-1
Record the error code and location code(s) that sent you to this MAP.

Step 152n-2
Press the green **start service** button on the panel with the UEPO switch.

Determine the I/O subsystem number from the error code (10yy xxxx) and the following list. The remaining steps of this map refer to this I/O subsystem:
- If yy=14, I/O subsystem number is 1, location is U1.9
- If yy=15, I/O subsystem number is 2, location is U1.5
- If yy=16, I/O subsystem number is 3, location is U1.1
- If yy=17, I/O subsystem number is 4, location is U1.13

Step 152n-3
Examine the last 2 characters of the error code recorded in "Step 152n-1", and use the following list to determine which DASD backplane to service.
- If the last 2 characters of the error code is 96, then the following steps refer to DASD backplane D of I/O subsystem number found in "Step 152n-2".
- If the last 2 characters of the error code is A6, then the following steps refer to DASD backplane C of I/O subsystem number found in "Step 152n-2".
- If the last 2 characters of the error code is B6, then the following steps refer to DASD backplane B of I/O subsystem number found in "Step 152n-2".
- If the last 2 characters of the error code is C6, then the following steps refer to DASD backplane A of I/O subsystem number found in "Step 152n-2".

Step 152n-4
Turn off the power. Examine the green ″power good out″ LEDs of both I/O subsystem DCAs.

Step 152n-5
Are all the green ″power good out″ LEDs of both I/O subsystem DCAs off?

Yes   Go to "Step 152n-6" on page 249.

No   Call for support.

Step 152n-6
Are there any DASD in positions A8, A9, Aa, or Ab of the DASD backplane found in "Step 152n-2" on page 248 and "Step 152n-3" on page 248?

Yes   Go to "Step 152n-7".

No   Go to "Step 152n-15" on page 250.

Step 152n-7
Turn on the power.

Step 152n-8
Did the error code recorded in "Step 152n-1" on page 248 reappear?

Yes   Go to "Step 152n-14".

No   One of the DASD just removed is defective. Go to "Step 152n-9".

Step 152n-9
Turn off the power. Make sure all green ″power good out″ LEDs of all installed I/O subsystem DCAs are off.

Step 152n-10
Reinstall one of the DASD removed in "Step 152n-6".

Step 152n-11
Turn on the power.

Step 152n-12
Did the error code recorded in "Step 152n-1" on page 248 reappear?

Yes   The DASD just reinstalled is defective. Replace it. **This ends the procedure**. Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

No   Go to "Step 152n-13".

Step 152n-13
Have all DASD that were removed in "Step 152n-6" been reinstalled?

Yes   The problem has changed. **This ends the procedure**.

No   Go to "Step 152n-9" to reinstall the next DASD.

Step 152n-14
Turn off the power. Make sure all green ″power good out″ LEDs of all installed I/O subsystem DCAs are off.

Step 152n-15

Replace the books in the following list, one at a time and in the listed order:

- DCA 1 at V1
- DCA 2 at V2

Step 152n-16

Turn on the power.

Step 152n-17

Did the system stop with the same error code as recorded in "Step 152n-1" on page 248?

Yes   Go to "Step 152n-18".

No   The book just replaced was defective. **This ends the procedure**. Return the system to its original configuration. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 152n-18

Turn off the power then make sure all the green "power good out" LEDs of both I/O subsystem DCAs are off.

Step 152n-19

Remove the new card that was just installed in "Step 152n-15" and reinstall the original card.

Step 152n-20

Have all the cards listed in "Step 152n-15" been replaced with new or original cards??

Yes   Go to "Step 152n-21".

No   Go to "Step 152n-15".

Step 152n-21

Examine the green "power good out" LEDs of both I/O subsystem DCAs.

Step 152n-22

Are all the green "power good out" LEDs of both I/O subsystem DCAs off?

Yes   Go to Step "Step 152n-23".

No   Call for support.

Step 152n-23

Replace the DASD backplane.

Step 152n-24

Turn on the power.

Step 152n-25
Did the system stop with the same error code as recorded in "Step 152m-1" on page 244?

Yes   Call for support.

No   The book just replaced was defective. **This ends the procedure**. Return the system to its original configuration. Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

MAP 1540: Problem Isolation Procedures

These procedures are used to locate problems in the processor subsystem, I/O subsystems, or rack. If a problem is detected, these procedures help you isolate the problem to a failing unit. Find the symptom in the following table; then follow the instructions given in the Action column.

Attention: To identify a FRU, these MAPs refer to FRU Identify LEDs. For more Information about the FRU Identify LEDs see "FRU Identify LEDs" on page 51.

Problem Isolation Procedures	
Symptom/Reference Code/Checkpoint	**Action**
You were sent here by the *Diagnostic Information for Multiple Bus Systems* book.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
406x 00B7	Go to "MAP 154B: Insufficient Hardware Resources Problem Isolation" on page 299. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.
406x 0EB1, 406x 0EB2, 406x 0EB3, 406x 0EB4, 406x 0EB5, 406x 0EB6, 406x 0EB7, 406x 0EB8, 406x 0EB9, 406x 0EBA, 406x 0EBB, 406x 0EBC	Go to "MAP 1549: Attention Problem Isolation" on page 288. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.
406x 0EB0	Go to "MAP 1541: JTAG Problem Isolation" on page 253.
406x 0C03, 4B2x 258A, 4B2x 25C7, 4B2x 25C8, 4B2x 25CF, 4B2x 25D3, 4B2x 25D5, 4B2x 25D7, 4B2x 25D8, 4B2x 25E5, 4B2x 25E9 4B2x 526B, 4B2x 526C, 4B2x 526D, 4B2x 526E	Go to "MAP 1543: MCM Module Problem Isolation" on page 278. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.
450x 302A, 450x 302C, 450x305A, 450x 305C, 450x 305E, 450x 307A, 450x 307B, 450x 307C, 450x 30BD, 450x 30C3	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.
450x 302B, 450x 302D, 450x 305B 450x 305D, 450x 305F, 450x 308A, 450x 308B, 450x 308C, 450x 30C6, 450x 30CC	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.

Problem Isolation Procedures	
Symptom/Reference Code/Checkpoint	**Action**
406x 0C09	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406x 0C0A	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406x 0001, 406x 0002, 406x 000A, 406x 000B, 406x 000C, 406x 000D, B1xx 4643, B1xx 4645, B1xx 4648	Go to "MAP 154A: I2C Bus Problem Isolation" on page 296. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.
E101, E102, E10A, E10B, E111, E120, E121, E122, E130, E131, E132, E133, E134, E135, E138, E139, E13A, E149, E14C, E191, E19A, E19B, E19D, E1A0, E1A1, E1A2, E1A3, E1A4, E1A5, E1A6, E1A7, E1A8, E1A9, E1AA, E1AB, E1AC, E1AD, E1AE, E1AF, E1B1, E1C4, E1C5, E1C6, E1D0, E1D3, E1D4, E1DB, E1F0	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287. **Attention:** Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.

MAP 1541: JTAG Problem Isolation

Step 1541-1
Record the error code and location code(s) that sent you to this MAP.

Step 1541-2
Check the following list to find the location code(s) recorded in "Step 1541-1":
- L3 module at U1.18-P1-C5
- L3 module at U1.18-P1-C11
- L3 module at U1.18-P1-C14
- L3 module at U1.18-P1-C20
- L3 module at U1.18-P1-C9
- L3 module at U1.18-P1-C10
- L3 module at U1.18-P1-C6
- L3 module at U1.18-P1-C12
- L3 module at U1.18-P1-C13
- L3 module at U1.18-P1-C7
- L3 module at U1.18-P1-C15
- L3 module at U1.18-P1-C16
- L3 module at U1.18-P1-C17
- L3 module at U1.18-P1-C18
- L3 module at U1.18-P1-C19
- L3 module at U1.18-P1-C8
- MCM module 0 at U1.18-P1-C1
- MCM module 3 at U1.18-P1-C2
- MCM module 1 at U1.18-P1-C3
- MCM module 2 at U1.18-P1-C4

Step 1541-3
Is (are) the location code(s) recorded in "Step 1541-1" also listed in "Step 1541-2"?

Yes   Go to "Step 1541-19" on page 256.

No   Go to "Step 1541-4".

Step 1541-4
Check the following list to find the location code(s) recorded in "Step 1541-1" on page 253:
- Primary I/O Book at U1.18-P1-H2
- Secondary I/O Book at U1.18-P1-H3
- Third I/O Book at U1.18-P1-H4
- Memory Book 6 at U1.18-P1-M5
- Memory Book 7 at U1.18-P1-M1

Step 1541-5
Is (are) the location code(s) recorded in "Step 1541-1" on page 253 also listed in "Step 1541-4"?

Yes   Go to "Step 1541-25" on page 257.

No   Go to "Step 1541-6".

Step 1541-6
Check the following list to find the location code(s) recorded in "Step 1541-1" on page 253:
- Memory Book 0 at U1.18-P1-M2
- Memory Book 1 at U1.18-P1-M3
- Memory Book 2 at U1.18-P1-M7
- Memory Book 3 at U1.18-P1-M6
- Memory Book 4 at U1.18-P1-M4
- Memory Book 5 at U1.18-P1-M8

Step 1541-7
Is (are) the location code(s) recorded in "Step 1541-1" on page 253 listed in "Step 1541-6" on page 254?

Yes   Go to "Step 1541-31" on page 258.

No   Go to "Step 1541-8".

Step 1541-8
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1541-9
Are all the amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1541-10".

No   Call for support.

Step 1541-10
Replace the item recorded in "Step 1541-1" on page 253.

Step 1541-11
Turn on the power.

Step 1541-12
Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes   Go to "Step 1541-13".

No   **This ends the procedure.**

        Return the system to its original configuration.

        Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1541-13
Turn off the power.

Step 1541-14
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1541-15
Are all the amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1541-16" on page 256.

No   Call for support.

Step 1541-16

Replace the primary I/O book at U1.18-P1-H2.

Step 1541-17

Turn on the power.

Step 1541-18

Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes   Go to "Step 1541-37" on page 259.

No   The part just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1541-19

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1541-20

Are all the amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1541-21".

No   Call for support.

Step 1541-21

Attention: Before you remove or replace any MCM or L3 module, *stop, read and understand* the following procedures: "MCM Module (Processor) and Passthru Modules" on page 769 and "L3 Cache Modules" on page 786.

Attention: MCM and L3 modules have a limit of three plug cycles. Before removing any of the modules in the following list, call for support.

Replace the following modules or books, if present, one at a time and in the order listed:
- First location code item recorded, if any, "Step 1541-1" on page 253.
- Second location code item recorded, if any, in "Step 1541-1" on page 253.
- Third location code item recorded, if any, in "Step 1541-1" on page 253.
- Fourth location code item recorded, if any, in "Step 1541-1" on page 253.
- Primary I/O book at U1.18-P1-H2.
- L3 module, at location U1.18-P1-C5 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C11 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C14 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C20 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C9 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C10 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C6 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C12 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C13 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C7 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C15 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C16 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C17 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C18 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C19 if not recorded in "Step 1541-1" on page 253.
- L3 module, at location U1.18-P1-C8 if not recorded in "Step 1541-1" on page 253.
- MCM module 0 at U1.18-P1-C1 if not recorded in "Step 1541-1" on page 253.

- MCM module 3 at U1.18-P1-C2 if not recorded in "Step 1541-1" on page 253.
- MCM module 1 at U1.18-P1-C3 if not recorded in "Step 1541-1" on page 253.
- MCM module 2 at U1.18-P1-C4 if not recorded in "Step 1541-1" on page 253.

Step 1541-22
Turn on the power.

Step 1541-23
Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes   Go to "Step 1541-24".

No   The part just replaced was defective. **This ends the procedure.**

    Return the system to its original configuration.

    Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1541-24
Have all the MCMs and books listed in "Step 1541-21" on page 256 been replaced?

Yes   Go to "Step 1541-37" on page 259.

No   Go to "Step 1541-19" on page 256.

Step 1541-25
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1541-26
Are all the amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1541-27" on page 258.

No   Call for support.

Step 1541-27

Replace the following books, if present, one at a time:

- First location code item recorded, if any in "Step 1541-1" on page 253.
- Second location code item recorded, if any, in "Step 1541-1" on page 253.
- Third location code item recorded, if any, in "Step 1541-1" on page 253.
- Fourth location code item recorded, if any, in "Step 1541-1" on page 253.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1541-1" on page 253.
- Secondary I/O Book at U1.18-P1-H3 if not recorded in "Step 1541-1" on page 253.
- Third I/O Book at U1.18-P1-H4 if not recorded in "Step 1541-1" on page 253.
- Memory Book 6 at U1.18-P1-M5 if not recorded in "Step 1541-1" on page 253.
- Memory Book 7 at U1.18-P1-M1 if not recorded in "Step 1541-1" on page 253.

Step 1541-28

Turn on the power.

Step 1541-29

Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes   Go to "Step 1541-30".

No   The book just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1541-30

Have all the books listed in "Step 1541-27" been replaced?

Yes   Go to "Step 1541-37" on page 259.

No   Go to "Step 1541-25" on page 257.

Step 1541-31

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1541-32

Are all the amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1541-33" on page 259.

No   Call for support.

Step 1541-33
Replace the following books, if present, one at a time:
- First location code item recorded in "Step 1541-1" on page 253.
- Second location code item recorded, if any, in "Step 1541-1" on page 253.
- Third location code item recorded, if any, in "Step 1541-1" on page 253.
- Fourth location code item recorded, if any, in "Step 1541-1" on page 253.
- Primary I/O book at U1.18-P1-H2.
- Memory book 0 at U1.18-P1-M2 if not recorded in "Step 1541-1" on page 253.
- Memory book 1 at U1.18-P1-M3 if not recorded in "Step 1541-1" on page 253.
- Memory book 2 at U1.18-P1-M7 if not recorded in "Step 1541-1" on page 253.
- Memory book 3 at U1.18-P1-M6 if not recorded in "Step 1541-1" on page 253.
- Memory book 4 at U1.18-P1-M4 if not recorded in "Step 1541-1" on page 253.
- Memory book 5 at U1.18-P1-M8 if not recorded in "Step 1541-1" on page 253

Step 1541-34
Turn on the power.

Step 1541-35
Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes   Go to "Step 1541-36".

No   The book just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1541-36
Have all the books listed in "Step 1541-33" been replaced?

Yes   Go to "Step 1541-37".

No   Go to "Step 1541-31" on page 258.

Step 1541-37
Turn off the power.

Step 1541-38
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1541-39
Are all the amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1541-40" on page 260.

No   Call for support.

Step 1541-40

Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1541-41

Turn on the power.

Step 1541-42

Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes   Go to "Step 1541-43".

No   The book just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1541-43

Turn off the power.

Make sure the amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1541-44

Call for support.

This ends the procedure.

MAP 1542: I/O Problem Isolation

This MAP is used to locate defective FRUs not found by normal diagnostics. For this procedure, diagnostics are run on a minimally configured system. If a failure is detected on the minimally configured system, the remaining FRUs are exchanged one at a time until the failing FRU is identified. If a failure is not detected, FRUs are added back until the failure occurs. The failure is then isolated to the failing FRU.

This I/O problem-determination MAP isolates I/O card and I/O subsystem failures. When I/O problem isolation is complete, all cables and cards exhibiting a failure will have been replaced or reseated.

Notes:

1. This MAP assumes that a CD-ROM drive is installed in the media subsystem and connected to a SCSI adapter in the first I/O subsystem, and that a Diagnostics CD-ROM is available.

2. If a general-access password or privileged-access password is installed, you are prompted to enter the password before the diagnostic CD-ROM can load.

3. The term *POST indicators* refers to the device mnemonics (words **Memory**, **Keyboard**, **Network**, **SCSI**, and **Speaker**) that appear on the system console during the power-on self-test (POST).

4. The service processor may have recorded one or more symptoms in its error log. It is a good idea to examine that error log before proceeding (see "System Information Menu" on page 694).

5. The service processor may have been set by the user to monitor system operations and to attempt recoveries. You can disable these actions while you diagnose and service the system. If you disable them, make notes of their current settings so that you can restore them easily. The following table lists the settings:

Surveillance	From the service processor Setup Menu, go to the Surveillance Setup Menu and disable surveillance. (Operating System Surveillance is disabled in partition mode.)
Unattended Start	From the service processor System Power Control Menu, disable unattended start mode.
Reboot Policy	From the System Power Control Menu, go to the Reboot/Restart Policy Setup Menu and set: a. Number of reboot attempts to **0** (zero) b. Use OS-Defined restart policy to **No** c. Enable supplemental restart policy to **No**.
Call Out	From the Call-In/Call-Out Setup Menu, go to the Serial Port Selection Menu and disable call-out on both serial ports.

The steps in this MAP will attempt to slow boot the system into service mode diagnostics. The following procedure describes booting a nonpartitioned system with an attached 3151 console. The procedure for booting a partitioned system with an attached HMC is slightly different and is described in "Performing Slow Boot" on page 341. "Performing Slow Boot" describes the procedure for booting online diagnostics (6 key between the **Keyboard** and **Speaker** indicators) and the following procedure requires booting standalone diagnostics (5 key between the **Keyboard** and **Speaker** indicators). Therefore, on a partitioned system, make sure the partition you selected to boot in the following procedure has the CD-ROM allocated to it, as described in Chapter 6, "Using the Online and Standalone Diagnostics", on page 669.

Step 1542-1

1. Ensure that the diagnostics and the operating system are shut down.
2. Turn off the power.
3. Select slow boot mode (select **Disable Fast Boot**) on the System Power Control menu from the service processor main menu.
4. Turn on the power.

5. Insert the diagnostic CD-ROM into the CD-ROM drive.

Does the CD-ROM appear to operate correctly?

NO Go to "Boot Problems" on page 338, and perform steps 1-8 for an internally attached boot device.

YES Go to "Step 1542-2".

Step 1542-2

1. When the keyboard indicator is displayed (the word **Keyboard**), press the 5 key on the firmware console.
2. Enter the appropriate password when you are prompted to do so.

Is the `Please define system console` screen displayed?

NO Go to "Step 1542-3".

YES Go to "Step 1542-4".

Step 1542-3

The system is unable to boot standalone diagnostics.

Check the service processor error log and the media subsystem operator panel for additional error codes resulting from the slow boot in "Step 1542-1" on page 261. Did the slow boot generate a different error code from the one that originally sent you to MAP 1542?

NO It appears you have a processor subsystem problem. Call for support. **This ends the procedure.**

YES Restore fast-boot mode (select **Enable Fast Boot**) on the System Power Control menu from the service processor main menu. Go to "Checkpoints and Error Codes Index" on page 344, and follow the actions for the new error code.

Step 1542-4

The system stopped with the `Please define system console` prompt appearing on the system console.

Standalone diagnostics can be booted. Perform the following:

1. Follow the instructions on the screen to select the system console.
2. When the `DIAGNOSTIC OPERATING INSTRUCTIONS` screen is displayed, press Enter.
3. If the terminal type has not been defined, you must use the Initialize Terminal option of the FUNCTION SELECTION menu to initialize the AIX operating system environment before you can continue with the diagnostics. This is a separate and different operation from selecting the firmware console display.
4. Select **Advanced Diagnostic Routines**.
5. When the DIAGNOSTIC MODE SELECTION menu displays, select **System Verification** to run diagnostics on all resources.

    Did running diagnostics produce a different symptom?

    NO Go to step number 6, below.

    YES Go to "Entry MAP" on page 107. Use the new symptom.
6. Record any devices missing from the list of all adapters and devices. Continue with this MAP. When you have fixed the problem, use this record to verify that all devices appear when you run System Verification.

Are there any devices missing from the list of all adapters and devices?

NO Reinstall all remaining adapters, if any, and reconnect all devices. Return the system to its original configuration. Be sure to select fast-boot mode (select **Enable Fast Boot**) on the System Power Control menu from the service processor main menu. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   The boot attempts that follow will attempt to isolate any remaining I/O subsystem problems with missing devices. Ignore any codes that may display on the operator panel unless stated otherwise. Go to "Step 1542-5".

Step 1542-5

There are missing devices associated with one or more I/O subsystems.

Note: Before continuing, check the cabling from the processor subsystem to I/O subsystem(s) to ensure that the system is cabled correctly. Refer to "Subsystem Positioning and Cabling" on page 34 for valid configurations. Record the current cabling configuration and then continue with the following steps:

1. Turn off the power.
2. At the primary I/O book, disconnect the cable connection at RIO port A0 (U1.18-P1-H2/Q1).
3. Disconnect the cable connection at I/O subsystem 1 left I/O port connector 0 (U1.9-P1/Q2). The RIO cable that was connected to RIO port A0 should now be loose and can be removed.
4. At the primary I/O book, disconnect the cable connection at RIO port A1 (U1.18-P1-H2/Q2) and reconnect it to RIO port A0 (U1.18-P1-H2/Q1).
5. Disconnect the cable connection at I/O subsystem 1 right I/O port connector 1 (U1.9-P2/Q1). The RIO cable that was connected to RIO port A0 on the primary I/O book should now be loose and can be removed.
6. Verify that processor subsystem RIO port A0 on primary I/O book (U1.18-P1-H2/Q1) is connected to I/O subsystem 1 left I/O port connector 0 (U1.9-P1/Q2).
7. Verify that I/O subsystem 1 left I/O port connector 1 (U1.9-P1/Q1) is connected to I/O subsystem 1 right I/O port connector 0 (U1.9-P2/Q2).
8. Turn on the power to boot standalone diagnostics from CD.
9. If the Please define the System Console screen is displayed, follow directions to select the system console.
10. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems* if necessary).
11. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Go to "Step 1542-6" on page 264.

YES   The RIO cable that was removed in step 5 above is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 1 right I/O port connector 1 (U1.9-P2/Q1) to processor subsystem RIO port A1 on primary I/O book (U1.18-P1-H2/Q2). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-6

The 406/70 server must have a minimum of one I/O subsystem and one media subsystem attached to the processor subsystem. The following steps reduce the system I/O to the required minimum of one I/O subsystem:

1. Turn off the system power.
2. Verify that processor subsystem RIO port A0 on primary I/O book (U1.18-P1-H2/Q1) is connected to I/O subsystem 1 left I/O port connector 0 (U1.9-P1/Q2).
3. Verify that I/O subsystem 1 right I/O port connector 1 (U1.9-P2/Q1) is connected to processor subsystem RIO port A1 on primary I/O book (U1.18-P1-H2/Q2).
4. Verify that I/O subsystem 1 left I/O port connector 1 (U1.9-P1/Q1) is connected to I/O subsystem 1 right I/O port connector 0 (U1.9-P2/Q2).
5. Disconnect cable at processor subsystem RIO port B0 on primary I/O book (U1.18-P1-H2/Q3), if cable attached.
6. Disconnect cable at processor subsystem RIO port B1 on primary I/O book (U1.18-P1-H2/Q4), if cable attached.
7. Unplug the secondary I/O book (U1.18-P1-H3), if present, and carefully pull it approximately 25 mm (1 inch) away from the backplane without disconnecting any cables
8. Unplug the third I/O book (U1.18-P1-H4), if present, and carefully pull it approximately 25 mm (1 inch) away from the backplane without disconnecting any cables.
9. Connect the previously removed RIO cable from I/O subsystem 1 right I/O port connector 1 (U1.9-P2/Q1) to processor subsystem RIO port A1 on primary I/O book (U1.18-P1-H2/Q2).
10. Verify that the power cable is connected between I/O subsystem 1 right media subsystem power connector (U1.9-P2-V1/Q3) and the media subsystem.
11. Disconnect power cables from remaining I/O subsystems.

    All I/O subsystems except the primary I/O subsystem should now be physically disconnected from the processor subsystem.

Step 1542-7

I/O subsystem 1 (U1.9) is the only I/O subsystem connected to the processor subsystem.

1. Turn on the power to boot standalone diagnostics from CD.

2. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

3. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

4. Check that all attached devices and adapters are listed.

If the `Please define the System Console` prompt did not display or all attached devices and adapters are not listed, the problem is in the media subsystem or I/O subsystem 1 (U1.9).

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Go to "Step 1542-8" on page 266.

YES   Go to "Step 1542-21" on page 272.

Step 1542-8

Perform the following to deconfigure the media subsystem:

1. Turn off the power.
2. If you have not already done so, set the service processor settings with the instructions in step 5 on page 261. Then return here and continue.
3. Exit the service processor menus, and disconnect the power cable between the I/O subsystem 1 right media subsystem power connector (U1.9-P2-V1/Q3) and the media subsystem.
4. If a display adapter with keyboard and mouse connected to a Keyboard/Mouse Attachment (USB) card in I/O subsystem 1 (U1.9) is being used as the console, locate a standalone serial terminal (for example a 3151), and connect to the S1 serial port or use the HMC.
5. Remove the keyboard and mouse, if attached to the I/O subsystem 1 (U1.9).
6. Remove (unplug) the tape drive (if installed) from the media subsystem.
7. Disconnect the diskette drive cable from the diskette drive connector on the media subsystem.
8. Connect the power cable between the I/O subsystem 1 right media subsystem power connector (U1.9-P2-V1/Q3) and the media subsystem. The media subsystem operator panel momentarily displays an `OK` prompt.
9. Set the current drawer location to x.y=1.9. Use this value in future steps until changed in a later step.

Step 1542-9
Are there any adapters in slots 1, 2, 3, 4 or 5 (location codes Ux.y-P1-I1 through I5) on the left side of the I/O subsystem?

NO   Go to "Step 1542-10".

YES   Go to "Step 1542-13" on page 268.

Step 1542-10
Are there any adapters in slots 6, 7, 8, 9 or 10 (location codes Ux.y-P1-I6 through I10) on the left side of the I/O subsystem?

NO   Go to "Step 1542-11".

YES   Go to "Step 1542-14" on page 268.

Step 1542-11
Are there any adapters in slots 1, 2, 3, 4 or 5 (location codes Ux.y-P2-I1 through I5) on the right side of the I/O subsystem?

NO   Go to "Step 1542-12".

YES   Go to "Step 1542-15" on page 269.

Step 1542-12
Are there any adapters in slots 6, 7, 8, 9 or 10 (location codes Ux.y-P2-I7 through I10) on the right side of the I/O subsystem?

NO   Go to "Step 1542-19" on page 271.

YES   Go to "Step 1542-16" on page 269.

Step 1542-13

1. If it is not already off, turn off the power.

2. Remove all adapters from slots 1, 2, 3, 4 and 5 (location codes Ux.y-P1-I1 through I5) from the left side of the I/O subsystem that are not attached to the boot device.

3. Label and record the location of any cables attached to the adapters.

4. Record the slot number of the adapters.

5. Turn on the power to boot standalone diagnostics from CD.

6. If the TTY screen displays `Enter 0 to select this console`, press the 0 key on the TTY terminal's keyboard.

7. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

8. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

9. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO Go to "Step 1542-10" on page 267.

YES Go to "Step 1542-17" on page 270.

Step 1542-14

1. If it is not already off, turn off the power.

2. Remove all adapters from slots 6, 7, 8, 9 and 10 (location codes Ux.y-P1-I6 through I10) from the left side of the I/O subsystem that are not attached to the boot device.

3. Label and record the location of any cables attached to the adapters.

4. Record the slot number of the adapters.

5. Turn on the power to boot standalone diagnostics from CD.

6. If the TTY screen displays `Enter 0 to select this console`, press the 0 key on the TTY terminal's keyboard.

7. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

8. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

9. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO Go to "Step 1542-11" on page 267.

YES Go to "Step 1542-17" on page 270.

Step 1542-15

1. If it is not already off, turn off the power.

2. Remove all adapters from slots 1, 2, 3, 4 and 5 (location codes Ux.y-P2-I1 through I5) from the right side of the I/O subsystem that are not attached to the boot device.

3. Label and record the location of any cables attached to the adapters.

4. Record the slot number of the adapters.

5. Turn on the power to boot standalone diagnostics from CD.

6. If the TTY screen displays Enter 0 to select this console, press the 0 key on the TTY terminal's keyboard.

7. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

8. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

9. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Go to "Step 1542-12" on page 267.

YES   Go to "Step 1542-17" on page 270.

Step 1542-16

1. If it is not already off, turn off the power.

2. Remove all adapters from slots 6, 7, 8, 9 and 10 (location codes Ux.y-P2-I6 through I10) from the right side of the I/O subsystem that are not attached to the boot device.

3. Label and record the location of any cables attached to the adapters.

4. Record the slot number of the adapters.

5. Turn on the power to boot standalone diagnostics from CD.

6. If the TTY screen displays `Enter 0 to select this console`, press the 0 key on the TTY terminal's keyboard.

7. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

8. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

9. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Go to "Step 1542-19" on page 271.

YES   Go to "Step 1542-17" on page 270.

Step 1542-17

If the `Please define the System Console` screen displays and all attached devices and adapters are listed, the problem is with one of the adapter cards or devices that was removed or disconnected from the I/O subsystem.

1. Turn off the power.
2. Reinstall one adapter or device that was removed. Use the original adapter cards in their original slots when reinstalling adapters.
3. Turn on the power to boot standalone diagnostics from CD.
4. If the `Please define the System Console` screen is displayed, follow directions to select the system console.
5. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).
6. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Go to "Step 1542-18".

YES   Reinstall the next adapter or device and return to the beginning of this step. Continue repeating this process until an adapter or device causes the `Please define the System Console` screen to not display or all attached devices and adapters to not be listed.

After installing all of the adapters and the `Please define the System Console` screen does display and all attached devices and adapters are listed, return the system to its original configuration. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-18

Replace the adapter you just installed with a new adapter and try to boot standalone diagnostics from CD again.

1. If the `Please define the System Console` screen is displayed, follow directions to select the system console.
2. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).
3. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   The I/O subsystem backplane is defective. Replace the I/O subsystem backplane on the side of the problem adapter (Ux.y-P1 or Ux.y-P2). Go to "Step 1542-20" on page 272.

YES   The adapter was defective. Go to "Step 1542-20" on page 272.

Step 1542-19

1. Turn off the power.

2. Disconnect the I/O subsystem power cables.

3. Replace the following parts, one at a time, in the sequence listed:

   a. Boot device SCSI cable

   b. Boot device SCSI adapter

   c. Boot device SCSI backplane

   d. Boot device

   e. I/O subsystem backplane where boot device is located

   f. Other I/O subsystem backplane

   g. Both I/O subsystem DCAs

4. Reconnect the I/O subsystem power cables.

5. Turn on the power.

6. Boot standalone diagnostics from CD.

7. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

8. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

9. Check that all attached devices and adapters are listed.

Did the Please define the System Console screen display and are all attached devices and adapters listed?

NO   Replace the next part in the list and return to the beginning of this step. Continue repeating this process until a part causes the `Please define the System Console` screen to be displayed and all attached devices and adapters to be listed. If you have replaced all the items listed above and the `Please define the System Console` screen does not display or all attached devices and adapters are not listed, check any external devices and cabling. If you do not find a problem, contact your next level of support for assistance.

YES   Go to "Step 1542-20" on page 272.

Step 1542-20

1. Turn off the power.

2. The part just replaced fixed the problem.

3. If a display adapter with keyboard, and mouse were used, reinstall the display adapter card, keyboard and mouse.

4. Reconnect the diskette drive cable to the diskette drive connector on the media subsystem.

5. Reconnect the tape drive (if previously installed) to the internal SCSI bus cable.

6. Plug in all adapters that were previously removed but not reinstalled.

7. Reconnect the I/O subsystem power cables that were previously disconnected.

Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-21

If the boot is successful, the problem is with a remaining I/O subsystem. Turn off the power.

Are there any I/O subsystems left to connect to the processor subsystem?

NO   Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

YES   Go to "Step 1542-22" on page 273.

Step 1542-22

Reconnect the next I/O subsystem in the configuration that you recorded earlier in this MAP. Use the following table to determine the next I/O subsystem to reconnect.

I/O Subsystem	Current x.y Value	New x.y Value	Go to:
1	1.9	1.5	"Step 1542-23" on page 274
2	1.5	1.1	"Step 1542-24" on page 274
3	1.1	1.13 (no IBF), 2.9 (with IBF)	"Step 1542-25" on page 275
4	1.13	2.1	"Step 1542-26" on page 276
4	2.9	2.1	"Step 1542-26" on page 276
5	2.1	2.5	"Step 1542-27" on page 276
6	2.5	2.13	"Step 1542-28" on page 277
7	2.13	2.19	"Step 1542-29" on page 278
8	2.19	2.19	"Step 1542-30" on page 278

Note: The I/O subsystems should be cabled as shown in "Subsystem Positioning and Cabling" on page 34.

Step 1542-23

1. Turn off the power.
2. At the primary I/O book, disconnect the cable connection at RIO port B0 (U1.18-P1-H2/Q3).
3. Disconnect the cable connection at I/O subsystem 2 left I/O port connector 0 (U1.5-P1/Q2). The RIO cable that was connected to RIO port B0 should now be loose and can be removed.
4. At the primary I/O book, disconnect the cable connection at RIO port B1 (U1.18-P1-H2/Q4) and reconnect it to RIO port B0 (U1.18-P1-H2/Q3).
5. Disconnect the cable connection at I/O subsystem 2 right I/O port connector 1 (U1.5-P2/Q1) and reconnect it to I/O subsystem 2 left I/O port connector 0 (U1.5-P1/Q2).
6. Verify that processor subsystem RIO port B0 on primary I/O book (U1.18-P1-H2/Q3) is connected to I/O subsystem 2 left I/O port connector 0 (U1.5-P1/Q2).
7. Verify that I/O subsystem 2 left I/O port connector 1 (U1.5-P1/Q1) is connected to I/O subsystem 2 right I/O port connector 0 (U1.5-P2/Q2).
8. Turn on the power to boot standalone diagnostics from CD.
9. If the `Please define the System Console` screen is displayed, follow directions to select the system console.
10. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).
11. Check that all attached devices and adapters are listed.

Did the Please define the System Console screen display and are all attached devices and adapters listed?

NO   Connect the previously removed RIO cable from I/O subsystem 2 right I/O port connector 1 (U1.5-P2/Q1) to processor subsystem RIO port B1 on primary I/O book (U1.18-P1-H2/Q4). Go to "Step 1542-9" on page 267.

YES   The RIO cable that was removed in step number 3 above is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 2 right I/O port connector 1 (U1.5-P2/Q1) to processor subsystem RIO port B1 on primary I/O book (U1.18-P1-H2/Q4). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-24

1. Turn off the power.
2. Slide the secondary I/O book (U1.18-P1-H3) all the way into the processor backplane until it is firmly seated and latched.
3. At the secondary I/O book, disconnect the cable connection at RIO port A0 (U1.18-P1-H3/Q4).
4. At the secondary I/O book, disconnect the cable connection at RIO port A1 (U1.18-P1-H3/Q3).
5. At the secondary I/O book, disconnect the cable connection at RIO port B0 (U1.18-P1-H3/Q2).
6. At the secondary I/O book, disconnect the cable connection at RIO port B1 (U1.18-P1-H3/Q1).
7. At the secondary I/O book, disconnect the cable connection at RIO port D0 (U1.18-P1-H3/Q6).
8. At the secondary I/O book, disconnect the cable connection at RIO port D1 (U1.18-P1-H3/Q5).
9. At the secondary I/O book, disconnect the cable connection at RIO port C0 (U1.18-P1-H3/Q8).
10. Disconnect the cable connection at I/O subsystem 3 left I/O port connector 0 (U1.1-P1/Q2). The RIO cable that was connected to RIO port C0 should now be loose and can be removed.
11. At the secondary I/O book, disconnect the cable connection at RIO port C1 (U1.18-P1-H3/Q7) and reconnect it to RIO port C0 (U1.18-P1-H3/Q8).
12. Disconnect the cable connection at I/O subsystem 3 right I/O port connector 1 (U1.1-P2/Q1) and reconnect it to I/O subsystem 3 left I/O port connector 0 (U1.1-P1/Q2).

13. Verify that processor subsystem RIO port C0 on secondary I/O book (U1.18-P1-H3/Q8) is connected to I/O subsystem 3 left I/O port connector 0 (U1.1-P1/Q2).

14. Verify that I/O subsystem 3 left I/O port connector 1 (U1.1-P1/Q1) is connected to I/O subsystem 3 right I/O port connector 0 (U1.1-P2/Q2).

15. Turn on the power to boot standalone diagnostics from CD.

16. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

17. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

18. Check that all attached devices and adapters are listed.

Did the Please define the System Console screen display and are all attached devices and adapters listed?

NO   Connect the previously removed RIO cable from I/O subsystem 3 right I/O port connector 1 (U1.1-P2/Q1) to processor subsystem RIO port C1 on secondary I/O book (U1.18-P1-H3/Q7). Go to "Step 1542-9" on page 267.

YES   The RIO cable that was removed in step 10 on page 274 above is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 3 right I/O port connector 1 (U1.1-P2/Q1) to processor subsystem RIO port C1 on secondary I/O book (U1.18-P1-H3/Q7). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-25

1. Turn off the power.

2. At the secondary I/O book, disconnect the cable connection at RIO port D0 (U1.18-P1-H3/Q6).

3. Disconnect the cable connection at I/O subsystem 4 left I/O port connector 0 (Ux.y-P1/Q2). The RIO cable that was connected to RIO port D0 should now be loose and can be removed.

4. At the secondary I/O book, disconnect the cable connection at RIO port D1 (U1.18-P1-H3/Q5) and reconnect it to RIO port D0 (U1.18-P1-H3/Q6).

5. Disconnect the cable connection at I/O subsystem 4 right I/O port connector 1 (Ux.y-P2/Q1) and reconnect it to I/O subsystem 4 left I/O port connector 0 (Ux.y-P1/Q2).

6. Verify that processor subsystem RIO port D0 on secondary I/O book (U1.18-P1-H3/Q6) is connected to I/O subsystem 4 left I/O port connector 0 (Ux.y-P1/Q2).

7. Verify that I/O subsystem 4 left I/O port connector 1 (Ux.y-P1/Q1) is connected to I/O subsystem 4 right I/O port connector 0 (Ux.y-P2/Q2).

8. Turn on the power to boot standalone diagnostics from CD.

9. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

10. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

11. Check that all attached devices and adapters are listed.

Did the Please define the System Console screen display and are all attached devices and adapters listed?

NO   Connect the previously removed RIO cable from I/O subsystem 4 right I/O port connector 1 (Ux.y-P2/Q1) to processor subsystem RIO port D1 on secondary I/O book (U1.18-P1-H3/Q5). Go to "Step 1542-9" on page 267.

YES   The RIO cable that was removed in step 3 above is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 4 right I/O port connector 1 (Ux.y-P2/Q1) to processor

subsystem RIO port D1 on secondary I/O book (U1.18-P1-H3/Q5). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-26

1. Turn off the power.

2. At the secondary I/O book disconnect the cable connection at RIO port A0 (U1.18-P1-H3/Q4).

3. Disconnect the cable connection at I/O subsystem 5 left I/O port connector 0 (U2.1-P1/Q2).The RIO cable that was connected to RIO port A0 should now be loose and can be removed.

4. At the secondary I/O book, disconnect the cable connection at RIO port A1 (U1.18-P1-H3/Q3) and reconnect it to RIO port A0 (U1.18-P1-H3/Q4).

5. Disconnect the cable connection at I/O subsystem 5 right I/O port connector 1 (U2.1-P2/Q1) and reconnect it to I/O subsystem 5 left I/O port connector 0 (U2.1-P1/Q2).

6. Verify that processor subsystem RIO port A0 on secondary I/O book (U1.18-P1-H3/Q4) is connected to I/O subsystem 5 left I/O port connector 0 (U2.1-P1/Q2).

7. Verify that I/O subsystem 5 left I/O port connector 1 (U2.1-P1/Q1) is connected to I/O subsystem 5 right I/O port connector 0 (U2.1-P2/Q2).

8. Turn on the power to boot standalone diagnostics from CD.

9. If the `Please define the System Console` screen is displayed, follow directions to select the system console.

10. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).

11. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Connect the previously removed RIO cable from I/O subsystem 5 right I/O port connector 1 (U2.1-P2/Q1) to processor subsystem RIO port A1 on secondary I/O book (U1.18-P1-H3/Q3). Go to "Step 1542-9" on page 267.

YES   The RIO cable that was removed in step 3 is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 5 right I/O port connector 1 (U2.1-P2/Q1) to processor subsystem RIO port A1 on secondary I/O book (U1.18-P1-H3/Q3). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-27

1. Turn off the power.

2. At the secondary I/O book, disconnect the cable connection at RIO port B0 (U1.18-P1-H3/Q2).

3. Disconnect the cable connection at I/O subsystem 6 left I/O port connector 0 (U2.5-P1/Q2). The RIO cable that was connected to RIO port B0 should now be loose and can be removed.

4. At the secondary I/O book, disconnect the cable connection at RIO port B1 (U1.18-P1-H3/Q1) and reconnect it to RIO port B0 (U1.18-P1-H3/Q2).

5. Disconnect the cable connection at I/O subsystem 6 right I/O port connector 1 (U2.5-P2/Q1) and reconnect it to I/O subsystem 6 left I/O port connector 0 (U2.5-P1/Q2).

6. Verify that processor subsystem RIO port B0 on secondary I/O book (U1.18-P1-H3/Q2) is connected to I/O subsystem 6 left I/O port connector 0 (U2.5-P1/Q2).

7. Verify that I/O subsystem 6 left I/O port connector 1 (U2.5-P1/Q1) is connected to I/O subsystem 6 right I/O port connector 0 (U2.5-P2/Q2).

8. Turn on the power to boot standalone diagnostics from CD.

9. If the `Please define the System Console` screen is displayed, follow directions to select the system console.
10. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).
11. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO Connect the previously removed RIO cable from I/O subsystem 6 right I/O port connector 1 (U2.5-P2/Q1) to processor subsystem RIO port B1 on secondary I/O book (U1.18-P1-H3/Q1). Go to "Step 1542-9" on page 267.

YES The RIO cable that was removed in step 3 on page 276 is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 6 right I/O port connector 1 (U2.5-P2/Q1) to processor subsystem RIO port B1 on secondary I/O book (U1.18-P1-H3/Q1). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-28

1. Turn off the power.
2. Slide the secondary I/O book (U1.18-P1-H4) all the way into the processor backplane until it is firmly seated and latched.
3. At the secondary I/O book, disconnect the cable connection at RIO port D0 (U1.18-P1-H4/Q6).
4. At the secondary I/O book, disconnect the cable connection at RIO port D1 (U1.18-P1-H4/Q5).
5. At the secondary I/O book, disconnect the cable connection at RIO port C0 (U1.18-P1-H4/Q8).
6. Disconnect the cable connection at I/O subsystem 7 left I/O port connector 0 (U2.13-P1/Q2). The RIO cable that was connected to RIO port C0 should now be loose and can be removed.
7. At the secondary I/O book, disconnect the cable connection at RIO port C1 (U1.18-P1-H4/Q7) and reconnect it to RIO port C0 (U1.18-P1-H4/Q8).
8. Disconnect the cable connection at I/O subsystem 7 right I/O port connector 1 (U2.13-P2/Q1) and reconnect it to I/O subsystem 7 left I/O port connector 0 (U2.13-P1/Q2).
9. Verify that processor subsystem RIO port C0 on secondary I/O book (U1.18-P1-H4/Q8) is connected to I/O subsystem 7 left I/O port connector 0 (U2.13-P1/Q2).
10. Verify that I/O subsystem 7 left I/O port connector 1 (U2.13-P1/Q1) is connected to I/O subsystem 7 right I/O port connector 0 (U2.13-P2/Q2).
11. Turn on the power to boot standalone diagnostics from CD.
12. If the `Please define the System Console` screen is displayed, follow directions to select the system console.
13. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).
14. Check that all attached devices and adapters are listed.

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO Connect the previously removed RIO cable from I/O subsystem 7 right I/O port connector 1 (U2.13-P2/Q1) to processor subsystem RIO port C1 on secondary I/O book (U1.18-P1-H4/Q7). Go to "Step 1542-9" on page 267.

YES The RIO cable that was removed in step 6 is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 7 right I/O port connector 1 (U2.13-P2/Q1) to processor subsystem

RIO port C1 on secondary I/O book (U1.18-P1-H4/Q7). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-29

1. Turn off the power.
2. At the secondary I/O book, disconnect the cable connection at RIO port D0 (U1.18-P1-H4/Q6).
3. Disconnect the cable connection at I/O subsystem 8 left I/O port connector 0 (U2.19-P1/Q2). The RIO cable that was connected to RIO port D0 should now be loose and can be removed
4. At the secondary I/O book, disconnect the cable connection at RIO port D1 (U1.18-P1-H4/Q5) and reconnect it to RIO port D0 (U1.18-P1-H4/Q6).
5. Disconnect the cable connection at I/O subsystem 8 right I/O port connector 1 (U2.19-P2/Q1) and reconnect it to I/O subsystem 8 left I/O port connector 0 (U2.19-P1/Q2).
6. Verify that processor subsystem RIO port D0 on secondary I/O book (U1.18-P1-H4/Q6) is connected to I/O subsystem 8 left I/O port connector 0 (U2.19-P1/Q2).
7. Verify that I/O subsystem 8 left I/O port connector 1 (U2.19-P1/Q1) is connected to I/O subsystem 8 right I/O port connector 0 (U2.19-P2/Q2).
8. Turn on the power to boot standalone diagnostics from CD.
9. If the `Please define the System Console` screen is displayed, follow directions to select the system console.
10. Use the Display Configuration and Resource List to list all attached devices and adapters (refer to the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, if necessary).
11. Check that all attached devices and adapters are listed

Did the `Please define the System Console` screen display and are all attached devices and adapters listed?

NO   Connect the previously removed RIO cable from I/O subsystem 8 right I/O port connector 1 (U2.19-P2/Q1) to processor subsystem RIO port D1 on secondary I/O book (U1.18-P1-H4/Q5). Go to "Step 1542-9" on page 267.

YES   The RIO cable that was removed in step 3 is defective. Replace the RIO cable. Connect the new RIO cable from I/O subsystem 8 right I/O port connector 1 (U2.19-P2/Q1) to processor subsystem RIO port D1 on secondary I/O book (U1.18-P1-H4/Q5). Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1542-30
This ends the procedure.

Reconfigure the system to its original condition. Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

MAP 1543: MCM Module Problem Isolation

Step 1543-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1543-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1543-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1543-4".

No   Call for support.

Step 1543-4

Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

You may be asked to replace one or more of the following cards and modules:
- Passthru module at U1.18-P1-C2
- Passthru module at U1.18-P1-C3
- MCM module 0 at U1.18-P1-C1
- MCM module 2 at U1.18-P1-C4
- MCM module 1 at U1.18-P1-C3
- MCM module 3 at U1.18-P1-C2
- System clock card, at location U1.18-P1-X5

Replace the following books and modules, if present, one at a time:
1. Passthru module at U1.18-P1-C2 if not recorded in "Step 1543-1" on page 278.
2. Passthru module at U1.18-P1-C3 if not recorded in "Step 1543-1" on page 278.
3. System clock card, at location U1.18-P1-X5 if not recorded in "Step 1543-1" on page 278.
4. First location code item recorded, if any, in "Step 1543-1" on page 278.
5. Second location code item recorded, if any, in "Step 1543-1" on page 278.
6. Third location code item recorded, if any, in "Step 1543-1" on page 278.
7. Fourth location code item recorded, if any, in "Step 1543-1" on page 278.
8. MCM module 0 at U1.18-P1-C1 if not recorded in "Step 1543-1" on page 278.
9. MCM module 2 at U1.18-P1-C4 if not recorded in "Step 1543-1" on page 278.
10. MCM module 1 at U1.18-P1-C3 if not recorded in "Step 1543-1" on page 278.
11. MCM module 3 at U1.18-P1-C2 if not recorded in "Step 1543-1" on page 278.

Step 1543-5

Turn on the power.

Step 1543-6

Did the system stop with the same error code as recorded in "Step 1543-1" on page 278?

Yes   Go to "Step 1543-7".

No   The module just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1543-7

Have all the modules listed in "Step 1543-4" been replaced?

Yes   Go to "Step 1543-8".

No   Go to "Step 1543-2" on page 278.

Step 1543-8

Turn off the power.

Step 1543-9

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1543-10

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 1543-11".

No Call for support.

Step 1543-11
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1543-12
Turn on the power.

Step 1543-13
Did the system stop with the same error code as recorded in "Step 1541-1" on page 253?

Yes Go to "Step 1543-14".

No The part just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1543-14
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1543-15
Call for support.

This ends the procedure.

MAP 1544: Inner L3 Module Problem Isolation

Step 1544-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1544-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1544-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes Go to "Step 1544-4".

No Call for support.

Step 1544-4
Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

You may be asked to replace one or more of the following books and modules:
* Memory book 0 at U1.18-P1-M2
* Memory book 1 at U1.18-P1-M3
* Memory book 2 at U1.18-P1-M7
* Memory book 3 at U1.18-P1-M6
* L3 module at U1.18-P1-C6
* L3 module at U1.18-P1-C7

- L3 module at U1.18-P1-C10
- L3 module at U1.18-P1-C11
- L3 module at U1.18-P1-C14
- L3 module at U1.18-P1-C15
- L3 module at U1.18-P1-C18
- L3 module at U1.18-P1-C19

Replace the following books and modules, if present, one at a time:

1. First location code item recorded, if any, in "Step 1544-1" on page 280.

2. Second location code item recorded, if any, in "Step 1544-1" on page 280.

3. Third location code item recorded, if any, in "Step 1544-1" on page 280.

Step 1544-5
Turn on the power.

Step 1544-6
Did the system stop with the same error code as recorded in "Step 1544-1" on page 280?

Yes   Go to "Step 1544-7".

No   The book or module just replaced was defective. **This ends the procedure.**

      Return the system to its original configuration.

      Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1544-7
Have all the books or modules listed in "Step 1544-4" on page 280 been replaced?

Yes   Go to "Step 1544-8".

No   Go to "Step 1544-2" on page 280.

Step 1544-8
Turn off the power.

Step 1544-9
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1544-10
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1544-11".

No   Call for support.

Step 1544-11
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1544-12
Turn on the power.

Step 1544-13
Did the system stop with the same error code as recorded in "Step 1544-1" on page 280?

Yes   Go to "Step 1544-14" on page 282.

No   The part just replaced was defective. **This ends the procedure.**

      Return the system to its original configuration.

      Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1544-14
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1544-15
Call for support.

This ends the procedure.

MAP 1545: Outer L3 Module Problem Isolation

Step 1545-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1545-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1545-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1545-4".

No   Call for support.

Step 1545-4
Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

You may be asked to replace one or more of the following books and modules:
- Memory book 4 at U1.18-P1-M4
- Memory book 5 at U1.18-P1-M8
- Memory book 6 at U1.18-P1-M5
- Memory book 7 at U1.18-P1-M1
- L3 module at U1.18-P1-C5
- L3 module at U1.18-P1-C8
- L3 module at U1.18-P1-C9
- L3 module at U1.18-P1-C12
- L3 module at U1.18-P1-C13
- L3 module at U1.18-P1-C16
- L3 module at U1.18-P1-C17
- L3 module at U1.18-P1-C20

Replace the following books and modules, if present, one at a time:
1. First location code item recorded, if any, in "Step 1545-1".
2. Second location code item recorded, if any, in "Step 1545-1".
3. Third location code item recorded, if any, in "Step 1545-1".

Step 1545-5
Turn on the power.

Step 1545-6
Did the system stop with the same error code as recorded in "Step 1545-1"?

Yes   Go to "Step 1545-7" on page 283.

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1545-7
Have all the books or modules listed in "Step 1545-4" on page 282 been replaced?

Yes   Go to "Step 1545-8".

No   Go to "Step 1545-2" on page 282.

Step 1545-8
Turn off the power.

Step 1545-9
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1545-10
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1545-11".

No   Call for support.

Step 1545-11
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1545-12
Turn on the power.

Step 1545-13
Did the system stop with the same error code as recorded in "Step 1545-1" on page 282?

Yes   Go to "Step 1545-14".

No   The part just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1545-14
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1545-15
Call for support.

This ends the procedure.

MAP 1546: Memory Book Problem Isolation

Step 1546-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1546-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1546-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1546-4".

No   Call for support.

Step 1546-4
Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

Replace the following books and modules, if present, one at a time:
- First location code item recorded, if any, in "Step 1546-1" on page 283.
- Second location code item recorded, if any, in "Step 1546-1" on page 283.
- Third location code item recorded, if any, in "Step 1546-1" on page 283.
- Memory book 0 at U1.18-P1-M2 if not recorded in "Step 1546-1" on page 283.
- Memory book 1 at U1.18-P1-M3 if not recorded in "Step 1546-1" on page 283.
- Memory book 2 at U1.18-P1-M7 if not recorded in "Step 1546-1" on page 283.
- Memory book 3 at U1.18-P1-M6 if not recorded in "Step 1546-1" on page 283.
- Memory book 4 at U1.18-P1-M4 if not recorded in "Step 1546-1" on page 283.
- Memory book 5 at U1.18-P1-M8 if not recorded in "Step 1546-1" on page 283.
- Memory book 6 at U1.18-P1-M5 if not recorded in "Step 1546-1" on page 283.
- Memory book 7 at U1.18-P1-M1 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C5 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C6 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C7 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C8 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C9 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C10 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C11 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C12 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C13 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C14 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C15 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C16 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C17 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C18 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C19 if not recorded in "Step 1546-1" on page 283.
- L3 module at U1.18-P1-C20 if not recorded in "Step 1546-1" on page 283.

Step 1546-5
Turn on the power.

Step 1546-6
Did the system stop with the same error code as recorded in "Step 1546-1" on page 283?

Yes   Go to "Step 1546-7".

No   The book or module just replaced was defective. **This ends the procedure.**

   Return the system to its original configuration.

   Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1546-7
Have all the books or modules listed in "Step 1546-4" been replaced?

Yes   Go to "Step 1546-8" on page 285.

No   Go to "Step 1546-2" on page 283.

Step 1546-8
Turn off the power.

Step 1546-9
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1546-10
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1546-11".

No   Call for support.

Step 1546-11
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1546-12
Turn on the power.

Step 1546-13
Did the system stop with the same error code as recorded in "Step 1546-1" on page 283?

Yes   Go to "Step 1546-14".

No   The part just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Step 1546-14
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1546-15
Call for support.

This ends the procedure.

MAP 1547: I/O Book Problem Isolation

Step 1547-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1547-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1547-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1547-4".

No   Call for support.

Step 1547-4
Replace the following books, if present, one at a time:
- Primary I/O Book at U1.18-P1-H2

- Secondary I/O Book at U1.18-P1-H3
- Third I/O Book at U1.18-P1–H4

Step 1547-5
Turn on the power.

Step 1547-6
Did the system stop with the same error code as recorded in "Step 1547-1" on page 285?

Yes   Go to "Step 1547-7".

No   The book just replaced was defective. **This ends the procedure.**

    Return the system to its original configuration.

    Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1547-7
Have all the books or modules listed in "Step 1547-4" on page 285 been replaced?

Yes   Go to "Step 1547-8".

No   Go to "Step 1547-2" on page 285.

Step 1547-8
Turn off the power.

Step 1547-9
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1547-10
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1547-11".

No   Call for support.

Step 1547-11
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1547-12
Turn on the power.

Step 1547-13
Did the system stop with the same error code as recorded in "Step 1547-1" on page 285?

Yes   Go to "Step 1547-14".

No   The part just replaced was defective. **This ends the procedure.**

    Return the system to its original configuration.

    Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1547-14
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1547-15
Call for support.

This ends the procedure.

MAP 1548: Memory and Processor Problem Isolation

Step 1548-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1548-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1548-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1548-4".

No   Call for support.

Step 1548-4
Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

Replace the following books and modules, if present, one at a time:
- First location code item recorded, if any, in "Step 1548-1".
- Second location code item recorded, if any, in "Step 1548-1".
- Third location code item recorded, if any, in "Step 1548-1".
- Memory book 0 at U1.18-P1-M2 if not recorded in "Step 1548-1".
- Memory book 1 at U1.18-P1-M3 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C6 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C7 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C10 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C11 if not recorded in "Step 1548-1".
- Passthru module at U1.18-P1-C2 if not recorded in "Step 1548-1".
- Passthru module at U1.18-P1-C3 if not recorded in "Step 1548-1".
- MCM module 0 at U1.18-P1-C1 if not recorded in "Step 1548-1".
- Memory book 2 at U1.18-P1-M7 if not recorded in "Step 1548-1".
- Memory book 3 at U1.18-P1-M6 if not recorded in "Step 1548-1".
- Memory book 4 at U1.18-P1-M4 if not recorded in "Step 1548-1".
- Memory book 5 at U1.18-P1-M8 if not recorded in "Step 1548-1".
- Memory book 6 at U1.18-P1-M5 if not recorded in "Step 1548-1".
- Memory book 7 at U1.18-P1-M1 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C5 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C8 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C9 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C12 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C13 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C14 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C15 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C16 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C17 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C18 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C19 if not recorded in "Step 1548-1".
- L3 module at U1.18-P1-C20 if not recorded in "Step 1548-1".
- MCM module 2 at U1.18-P1-C4 if not recorded in "Step 1548-1".
- MCM module 1 at U1.18-P1-C3 if not recorded in "Step 1548-1".
- MCM module 3 at U1.18-P1-C2 if not recorded in "Step 1548-1".

Step 1548-5
Turn on the power.

Step 1548-6
Did the system stop with the same error code as recorded in "Step 1548-1" on page 287?

Yes   Go to "Step 1548-7".

No   The book or module just replaced was defective. **This ends the procedure.**

    Return the system to its original configuration.

    Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1548-7
Have all the books or modules listed in "Step 1548-4" on page 287 been replaced?

Yes   Go to "Step 1548-8".

No   Go to "Step 1548-2" on page 287.

Step 1548-8
Turn off the power.

Step 1548-9
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1548-10
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

Yes   Go to "Step 1548-11".

No   Call for support.

Step 1548-11
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1548-12
Turn on the power.

Step 1548-13
Did the system stop with the same error code as recorded in "Step 1548-1" on page 287?

Yes   Go to "Step 1548-14".

No   The part just replaced was defective. **This ends the procedure.**

    Return the system to its original configuration.

    Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Step 1548-14
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1548-15
Call for support.

This ends the procedure.

MAP 1549: Attention Problem Isolation

Step 1549-1
Record the error code and the location code(s) that sent you to this MAP.

Step 1549-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1549-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

No   Call for support.

Yes   Go to "Step 1549-4".

Step 1549-4
Examine the following table and locate the error code that sent you to this MAP to determine your next step.

Error Code	Action
406x 0EB1	Go to "Step 1549-5".
406x 0EB2	Go to "Step 1549-9" on page 290.
406x 0EB3	Go to "Step 1549-13" on page 291.
406x 0EB4	Go to "Step 1549-33" on page 294.
406x 0EB5	Go to "Step 1549-29" on page 293.
406x 0EB6	Go to "Step 1549-33" on page 294.
406x 0EB7	Go to "Step 1549-33" on page 294.
406x 0EB8	Go to "Step 1549-33" on page 294.
406x 0EB9	Go to "Step 1549-33" on page 294.
406x 0EBA	Go to "Step 1549-17" on page 291.
406x 0EBB	Go to "Step 1549-21" on page 292.
406x 0EBC	Go to "Step 1549-25" on page 292.

Step 1549-5
Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support. Replace the following books and modules, if present, one at a time:

- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.
- MCM module 0 at U1.18-P1-C1 if not recorded in "Step 1549-1" on page 288.
- MCM module 2 at U1.18-P1-C4 if not recorded in "Step 1549-1" on page 288.
- MCM module 1 at U1.18-P1-C3 if not recorded in "Step 1549-1" on page 288.
- MCM module 3 at U1.18-P1-C2 if not recorded in "Step 1549-1" on page 288.

Step 1549-6
Turn on the power.

Step 1549-7
Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No   The book or module just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 1549-8".

Step 1549-8
Have all the books or modules listed in "Step 1549-5" on page 289 been replaced?

No   Go to "Step 1549-37" on page 295.

Yes   Go to "Step 1549-2" on page 289.

Step 1549-9
Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

Replace the following books and modules, if present, one at a time:
- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C6 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C7 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C10 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C11 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C5 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C8 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C9 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C12 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C13 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C14 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C15 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C16 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C17 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C18 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C19 if not recorded in "Step 1549-1" on page 288.
- L3 module at U1.18-P1-C20 if not recorded in "Step 1549-1" on page 288.

Step 1549-10
Turn on the power.

Step 1549-11
Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 1549-12".

Step 1549-12
Have all the books listed in "Step 1549-9" been replaced?

No   Go to "Step 1549-2" on page 289.

Yes   Go to "Step 1549-13" on page 291.

Step 1549-13

Replace the following books and modules, if present, one at a time:

- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.
- Memory book 0 at U1.18-P1-M2 if not recorded in "Step 1549-1" on page 288.
- Memory book 1 at U1.18-P1-M3 if not recorded in "Step 1549-1" on page 288.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.
-

Step 1549-14

Turn on the power.

Step 1549-15

Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No   The book or module just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 1549-16".

Step 1549-16

Have all the books or modules listed in "Step 1549-13" been replaced?

No   Go to "Step 1549-2" on page 289.

Yes   Go to "Step 1549-37" on page 295.

Step 1549-17

Replace the following books and modules, if present, one at a time:

- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.
- Memory book 2 at U1.18-P1-M7 if not recorded in "Step 1549-1" on page 288.
- Memory book 3 at U1.18-P1-M6 if not recorded in "Step 1549-1" on page 288.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.

Step 1549-18

Turn on the power.

Step 1549-19

Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No   The book or module just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 1549-20".

Step 1549-20

Have all the books or modules listed in "Step 1549-17" been replaced?

No   Go to "Step 1549-2" on page 289.

Yes   Go to "Step 1549-37" on page 295.

Step 1549-21

Replace the following books and modules, if present, one at a time:

- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.
- Memory book 4 at U1.18-P1-M4 if not recorded in "Step 1549-1" on page 288.
- Memory book 5 at U1.18-P1-M8 if not recorded in "Step 1549-1" on page 288.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.

Step 1549-22

Turn on the power.

Step 1549-23

Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes Go to "Step 1549-24".

Step 1549-24

Have all the books or modules listed in "Step 1549-21" been replaced?

No Go to "Step 1549-2" on page 289.

Yes Go to "Step 1549-37" on page 295.

Step 1549-25

Replace the following books and modules, if present, one at a time:

- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.
- Memory book 6 at U1.18-P1-M5 if not recorded in "Step 1549-1" on page 288.
- Memory book 7 at U1.18-P1-M1 if not recorded in "Step 1549-1" on page 288.
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.

Step 1549-26

Turn on the power.

Step 1549-27

Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes Go to "Step 1549-28".

Step 1549-28

Have all the books or modules listed in "Step 1549-25" been replaced?

No Go to "Step 1549-2" on page 289.

Yes Go to "Step 1549-37" on page 295.

Step 1549-29

Replace the following books and modules, if present, one at a time:

* First location code item recorded, if any, in "Step 1549-1" on page 288.
* Second location code item recorded, if any, in "Step 1549-1" on page 288.
* Third location code item recorded, if any, in "Step 1549-1" on page 288.
* Secondary I/O Book at U1.18-P1-H3 if not recorded in "Step 1549-1" on page 288.
* Third I/O Book at U1.18-P1-H4 if not recorded in "Step 1549-1" on page 288.
* Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.

Step 1549-30

Turn on the power.

Step 1549-31
Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 1549-32".

Step 1549-32
Have all the books or modules listed in "Step 1549-29" on page 293 been replaced?

No   Go to "Step 1549-2" on page 289.

Yes   Go to "Step 1549-37" on page 295.

Step 1549-33
Replace the following books and modules, if present, one at a time:
- Replace the Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 1549-1" on page 288.
- First location code item recorded, if any, in "Step 1549-1" on page 288.
- Second location code item recorded, if any, in "Step 1549-1" on page 288.
- Third location code item recorded, if any, in "Step 1549-1" on page 288.

Step 1549-34
Turn on the power.

Step 1549-35
Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 1549-36".

Step 1549-36
Have all the books or modules listed in "Step 1549-33" been replaced?

No   Go to "Step 1549-2" on page 289.

Yes   Call for support. **This ends the procedure.**

Step 1549-37
Turn off the power.

Step 1549-38
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 1549-39
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

No Call for support.

Yes Go to "Step 1549-40".

Step 1549-40
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 1549-41
Turn on the power.

Step 1549-42
Did the system stop with the same error code as recorded in "Step 1549-1" on page 288?

No The part just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes Go to "Step 1549-43".

Step 1549-43
Turn off the power. Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 1549-44
Call for support. **This ends the procedure.**

MAP 154A: I2C Bus Problem Isolation

Step 154A-1

Record the error code, location code(s), word 13, and word 16 that sent you to this MAP.

Step 154A-2

Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 154A-3

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

No   Call for support.

Yes   Go to "Step 154A-4".

Step 154A-4

Examine the following table and locate the error code that sent you to this MAP to determine your next step.

Error Code	Action
B1xx 4643	Go to "Step 154A-22" on page 298.
B1xx 4645	Go to "Step 154A-9" on page 297.
B1xx 4648, 406x 0001, 406x 0002, 406x 000A, 406x 000B, 406x 000C, 406x 000D	Go to "Step 154A-5".

Step 154A-5

Replace the following books and modules, if present, one at a time:
- First location code item recorded, if any, in "Step 154A-1".
- Second location code item recorded, if any, in "Step 154A-1".
- Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 154A-1".
- Secondary I/O Book at U1.18-P1-H3 if not recorded in "Step 154A-1".
- Third I/O Book at U1.18-P1-H4 if not recorded in "Step 154A-1".
- System clock card, at U1.18-P1-X5 if not recorded in "Step 154A-1".

Step 154A-6

Turn on the power.

Step 154A-7

Did the system stop with the same error code as recorded in "Step 154A-1"?

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 154A-8".

Step 154A-8

Have all the books listed in "Step 154A-5" been replaced?

No   Go to "Step 154A-2".

Yes   Go to "Step 154A-14" on page 297.

Step 154A-9

Is the value recorded in "Step 154A-1" on page 296 for word 16 of this error code equal to 00000008 or 00000009?

No Go to "Step 154A-5" on page 296.

Yes Go to "Step 154A-10".

Step 154A-10

Replace the following books and modules, if present, one at a time:

- First location code item recorded, if any, in "Step 154A-1" on page 296.
- Second location code item recorded, if any, in "Step 154A-1" on page 296.
- Primary I/O Book at U1.18-P1-H2 if not recorded, in "Step 154A-1" on page 296.
- Capacitor book, at location U1.18-P1-V3 if not recorded in "Step 154A-1" on page 296.
- Capacitor book, at location U1.18-P1-V7 if not recorded in "Step 154A-1" on page 296.

Step 154A-11

Turn on the power.

Step 154A-12

Did the system stop with the same error code as recorded in "Step 154A-1" on page 296?

No The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Yes Go to "Step 1549-12" on page 290.

Step 154A-13

Have all the books or modules listed in "Step 154A-10" been replaced?

No Go to "Step 154A-2" on page 296.

Yes Go to "Step 154A-14".

Step 154A-14

Turn off the power.

Step 154A-15

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 154A-16
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

No   Call for support.

Yes   Go to "Step 154A-17".

Step 154A-17
Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18-P1.

Step 154A-18
Turn on the power.

Step 154A-19
Did the system stop with the same error code as recorded in "Step 154A-1" on page 296?

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 154A-20".

Step 154A-20
Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 154A-21
Call for support. **This ends the procedure.**

Step 154A-22
Is the value recorded in "Step 154A-1" on page 296 for word 13 of this error code equal to 0000A218 or 0000A21B?

No   Go to "Step 154A-5" on page 296.

Yes   Go to "Step 154A-23".

Step 154A-23
Replace the following cards and modules, if present, one at a time:
* First location code item recorded, if any, in "Step 154A-1" on page 296.
* Second location code item recorded, if any, in "Step 154A-1" on page 296.
* Primary I/O Book at U1.18-P1-H2 if not recorded in "Step 154A-1" on page 296.
* Component on which you are trying to turn on the identify LED at the location you selected.

Step 154A-24
Turn on the power.

Step 154A-25
Did the system stop with the same error code as recorded in "Step 154A-1" on page 296?

No   The card or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 154A-26" on page 299.

Step 154A-26
Have all the cards or modules listed in "Step 154A-23" on page 298 been replaced?

No   Go to "Step 154A-2" on page 296.

Yes   Go to "Step 154A-14" on page 297.

MAP 154B: Insufficient Hardware Resources Problem Isolation

Step 154B-1
Record the error code, location code(s), and word 13 that sent you to this MAP.

Step 154B-2
Turn off the power.

Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 154B-3
Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

No   Call for support.

Yes   Go to "Step 154B-4" on page 300.

Step 154B-4

Attention: Before replacing any parts, examine the processor subsystem drawer to ensure that:

* At least one MCM (processor) module is installed.
* At least one memory card is installed.
* At least one L3 cache module is installed.
* The primary I/O book is installed.

Refer to the error code recorded in "Step 154B-1" on page 299. When using the listings below, note the error code condition before you replace parts that are called out. Replace the following FRUs, if present, one at a time:

Attention: Some of the parts in the following list are modules that have a limit of three plug cycles. Before replacing any of the modules in the following list, call for support.

* First location code item recorded, if any, in "Step 154B-1" on page 299.
* Second location code item recorded, if any, in "Step 154B-1" on page 299.
* Third location code item recorded, if any, in "Step 154B-1" on page 299.

Note: Replace the following FRUs only if they are associated with the word 13 that you recorded earlier.

If the value of word 13, recorded in "Step 154B-1" on page 299, is 4110 0000 or 4060 0000, replace the following:

* Primary I/O book at U1.18-P1-H2 if not recorded in "Step 154B-1" on page 299.

If the value of word 13, recorded in "Step 154B-1" on page 299, is 403F 0000 or 40FF 0000, replace the following:

* Memory book 0 at U1.18-P1-M2 if not recorded in "Step 154B-1" on page 299.
* Memory book 1 at U1.18-P1-M3 if not recorded in "Step 154B-1" on page 299
* Memory book 2 at U1.18-P1-M7 if not recorded in "Step 154B-1" on page 299
* Memory book 3 at U1.18-P1-M6 if not recorded in "Step 154B-1" on page 299.

If the value of word 13, recorded in "Step 154B-1" on page 299, is 402F 0000, replace the following:

* MCM module 0 at U1.18-P1-C1 if not recorded in "Step 154B-1" on page 299.
* MCM module 2 at U1.18-P1-C4 if not recorded in"Step 154B-1" on page 299.
* MCM module 1 at U1.18-P1-C3 if not recorded in "Step 154B-1" on page 299.
* MCM module 3 at U1.18-P1-C2 if not recorded in "Step 154B-1" on page 299.

Step 154B-5

Turn on the power.

Step 154B-6

Did the system stop with the same error code as recorded in "Step 154B-1" on page 299?

No   The book or module just replaced was defective. **This ends the procedure.**

Return the system to its original configuration.

Go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 154B-7".

Step 154B-7

Have all the books or modules listed in "Step 154B-4" been replaced?

No   Go to "Step 154B-2" on page 299.

Yes   Go to "Step 154B-8" on page 301.

Step 154B-8
Turn off the power.

Step 154B-9
Examine the amber logic-power LEDs of all installed processor subsystem DCAs.

Step 154B-10

Are all amber logic-power LEDs of all installed processor subsystem DCAs off?

No   Call for support.

Yes   Go to "Step 154A-11" on page 297.

Step 154B-11

Attention: Before replacing the system backplane, call for support.

Replace the system backplane at U1.18–P1.

Step 154B-12

Turn on the power.

Step 154B-13

Did the system stop with the same error code as recorded in "Step 154B-1" on page 299?

No   The book or module just replaced was defective. **This ends the procedure.**

       Return the system to its original configuration.

       Go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

Yes   Go to "Step 154B-14".

Step 154B-14

Turn off the power.

Make sure all amber logic-power LEDs of all installed processor subsystem DCAs are off.

Step 154B-15

Call for support. **This ends the procedure.**

Chapter 4. Checkpoints

Checkpoints display on the media subsystem operator panel and the virtual terminal while the system is powering on and going through the initial program load (IPL). This chapter explains the IPL flow of the system and provides a table that lists checkpoints that you might see in the media subsystem operator panel and in a virtual terminal window on the HMC.

IPL Flow

The IPL process starts when ac power is connected to the system. The IPL process has the following phases:

- **Phase 1: Service Processor Initialization**

  Phase 1 starts when ac power is connected to the system and ends when OK is displayed in the media subsystem operator panel. 8xxx checkpoints are displayed during this phase. Several 9xxx codes may also be displayed. Service processor menus are available at the end of this phase by striking any key on the console keyboard.

- **Phase 2: Hardware Initialization by the Service Processor**

  Phase 2 starts when system power-on is initiated by pressing the power on button on the media subsystem operator panel. 9xxx checkpoints are displayed during this time. 91FF, the last checkpoint in this phase, indicates the transition to phase 3 is taking place.

- **Phase 3: System Firmware initialization**

  On a full system partition, at phase 3, a system processor takes over control and continues initializing partition resources. During this phase, checkpoints in the form Exxx are displayed. E105, the last checkpoint in this phase, indicates that control is being passed to the operating system boot program.

  On a partitioned system, there is a global systemwide initialization phase 3, during which a system processor continues the initialization process. Checkpoints in this phase are of the form Exxx. This global phase 3 ends with a "LPAR..." on the operator panel. As a logical partition begins a partition-initialization phase 3, one of the system processors assigned to that partition continues initialization of resource assigned to that partition. Checkpoints in this phase are also of the form Exxx. This partition phase 3 ends with an E105 displayed on the partition's virtual operator panel on the HMC, indicating control has been passed to that logical partition's operating system boot program. For both the global and partition phase 3, location codes may also be displayed on the physical operator panel and the partition's virtual terminal, respectively.

- **Phase 4: Operating System Boot**

  When the operating system starts to boot, checkpoints in the form 0xxx and 2xxx are displayed. This phase ends when the operating system login prompt displays on the operating system console.

The following table outlines the IPL phases from power-on to the operating system login prompt, matching the phases to corresponding operator-panel checkpoints for a typical partition boot. Also listed are the approximate boot times for each phase, along with their dependencies for each phase.

Note: The following table lists the major checkpoints only.

Phase #	Checkpoints on Operator Panel or HMC	Time in Phase (minutes)	Major Contributors to Time in Phase
Phase 1	8xxx => OK	Approx. 1	
Phase 2	9xxx => 91FF	3 to 6	Number of I/O drawers
Phase 3	Exxx => E105	1 to 3	Number of bootable adapters
Phase 4	0xxx or 2xxx => blank	2 to 30+	Number of SSA drives Number of SCSI drives Number of async sessions Number of processors Number of adapters Amount of memory

Checkpoints enable users and service personnel to know what the server is doing, with some detail, as it initializes. These checkpoints are not intended to be error indicators, but in some cases a server could hang at one of the checkpoints without displaying an 8-character error code. It is for these hang conditions, only, that any action should be taken with respect to checkpoints. The most appropriate action is included with each checkpoint.

Before taking actions listed with a checkpoint, check for additional symptoms in the service processor error log. See the "System Information Menu" on page 694 for information on how to access the service processor error log.

Note: Go to "MAP 1540: Problem Isolation Procedures" on page 252 for any of the following checkpoint hang conditions:

- A four-digit code in the range of 8xxx through EFFF not listed in the checkpoint tables.
- A four-digit code is in the checkpoint tables, but does not contain a repair action or FRU listing.
- All of the FRUs listed in the repair action have been replaced and the problem has not been corrected.

Checkpoints listed in the following tables are in the format 8xxx, 9xxx, Axxx, Bxxx, or Exxx, where x is any hexadecimal digit from 1-9 or A-F. If your system hangs with a checkpoint displayed that begins with anything other than 8, 9, A, B, or E, go to the *Diagnostic Information for Multiple Bus Systems*.

Use the following table to determine where to find the checkpoint.

Symptom	Action
You have a code that is of the form 8xxx, 9xxx, Axxx, or Bxxx.	Go to "Service Processor Checkpoints" on page 306.
You have a code of the form Exxx.	Go to "Firmware Checkpoints" on page 313.
You have a four-character code that is *not* of the form 8xxx, 9xxx, Axxx, Bxxx, or Exxx.	See the *Diagnostic Information for Multiple Bus Systems*.

Service Processor Checkpoints

Service processor checkpoints are in the range 8xxx to Bxxx. The message **OK** indicates successful service processor testing and initialization. Firmware checkpoints are listed in "Firmware Checkpoints" on page 313.

Note: A spinning (or twirling) slash displays in the upper-right corner of the operator panel display while some checkpoints are being displayed. If the slash stops spinning, a hang condition is indicated.

Checkpoint	Description	Action/ Possible Failing FRU
8000	Test of the service processor DRAM	See note 1 on page 311.
8004	Verify base code checksum	See note 1 on page 311.
8008	Verify base code mirror checksum	See note 1 on page 311.
8009	Set NVRAM configuration in TITAN	See note 1 on page 311.
800F	Start base code	See note 1 on page 311.
8010	Start supervisor in base code	See note 1 on page 311.
8012	Initialize hardware interrupts	See note 1 on page 311.
8014	Allocate and initialize area in DRAM	See note 1 on page 311.
8016	Initialize debugger and build VPD	See note 1 on page 311.
8018	Initialize service processor interfaces	See note 1 on page 311.
801A	Initialize external FLASH load	See note 1 on page 311.
801B	Initialize and test ISA hub chip	See note 1 on page 311.
801C	Initialize and test SUPER I/O chip	See note 1 on page 311.
801F	Initialize diskette, verify VDASD and start operational loader	See note 1 on page 311.
809x	Related to recovery mode system firmware update from diskette	See note 3 on page 311.
8092	Diskette initialization during recovery mode system firmware update	See note 3 on page 311.
8098	Firmware image being read during recovery mode system firmware update	See note 3 on page 311.
809C	Firmware image being written during recovery mode system firmware update	See note 3 on page 311.
809F	Diskette error during recovery mode system firmware update	See note 3 on page 311.
8100	Start operational loader	See note 1 on page 311.
81xx	Load code into DRAM from VDASD (where xx = number of loads)	See note 1 on page 311.
81FE	Load service processor operating system	See note 1 on page 311.
81FF	Start service processor operating system	See note 1 on page 311.
9000	Primary service processor task initializing	See note 1 on page 311.
9009	System processor IPL has started	See note 1 on page 311.
9010	Primary service processor thread waiting for response	See note 1 on page 311.
9020	Service processor state set to pre-standby	See note 1 on page 311.
9021	Service processor state set to standby	See note 1 on page 311.

Checkpoint	Description	Action/ Possible Failing FRU
9022	Service processor state set to IPL	See note 1 on page 311.
9023	Service processor state set to runtime	See note 1 on page 311.
9024	Service processor state set to terminate	See note 1 on page 311.
9025	Service processor state set to DPO	See note 1 on page 311.
9030	Waiting for secondary thread acknowledgement	See note 1 on page 311.
9033	I/O base initialization	See note 1 on page 311.
9034	I2C initialization	See note 1 on page 311.
9035	ISA initialization	See note 1 on page 311.
9036	Mailbox initialization	See note1 on page 311.
9037	SLLA initialization (VPD)	See note 1 on page 311.
9038	NVRAM initialization	See note 1 on page 311.
9039	Serial port initialization	See note 1 on page 311.
903A	Serial I/O initialization	See note 1 on page 311.
903B	SPCN initialization	See note 1 on page 311.
9051	End of reset/reload operation: service processor dump has completed	See note 1 on page 311.
9055	Start menus thread	See note 1 on page 311.
9060	Checking/configuring modem on serial port 0	See note 4 on page 311.
9061	Checking/configuring modem on serial port 1	See note 4 on page 311.
906A	Create mailbox processing thread	See note 1 on page 311.
906B	Create menu interface thread	See note 1 on page 311.
906C	Create general thread	See note 1 on page 311.
906D	Create SPCN thread	See note 1 on page 311.
9070	Create thread to control LEDs on I/O subsystems	See note 1 on page 311.
9071	Initialize thread to control LEDs on I/O subsystems	See note 1 on page 311.
9080	Start VPD collection program	See note 1 on page 311.
9081	Start SC VPD data collection	See note 1 on page 311.
9082	I2C/SPCN VPD data collection	See note 1 on page 311.
9083	End SC VPD data collection	See note 1 on page 311.
9084	End I2C/SPCN VPD data collection	See note 1 on page 311.
90FD	Waiting for IBIST to complete	See note 1 on page 311.
9101	Setup load source	See note 1 on page 311.
9102	Open load source	See note 1 on page 311.
9103	Verify open status of load source	See note 1 on page 311.
9104	Waiting for SPCN VPD collection to be completed	See note 1 on page 311.
9105	Load IPL LIDs	See note 1 on page 311.

Checkpoint	Description	Action/ Possible Failing FRU
9106	Initialize MOPs	See note 1 on page 311.
9107	System flush	See note 1 on page 311.
9108	Processor scan interface BATs and LBIST	See note 1 on page 311.
9109	ABIST	See note 1 on page 311.
910A	Non-processor scan interface BATs and LBIST	See note 1 on page 311.
910B	Wire test	See note 1 on page 311.
910C	Initialize main storage (system memory)	See note 1 on page 311.
910D	Configure processors	See note 1 on page 311.
910E	Configure and initialize I/O	See note 1 on page 311.
910F	Test and initialize main storage (system memory)	See note 1 on page 311.
9110	Free IPL LIDs	See note 1 on page 311.
9111	Load run-time LIDS	See note 1 on page 311.
9112	Load dump LIDs	See note 1 on page 311.
9113	Enable attention	See note 1 on page 311.
9114	Enable function 22	See note 1 on page 311.
9115	Load system IPL program	See note 1 on page 311.
9116	Load system data areas (NACA/PACA)	See note 1 on page 311.
9117	Start system IPL program	See note 1 on page 311.
9119	Waiting for VPD collection to complete	See note 1 on page 311.
911E	Message passing waiting	See note 1 on page 311.
911F	Message passing starting	See note 1 on page 311.
9184	Firmware image being loaded into service processor's control storage during firmware update.	1. Remove, then reapply power to the system. If the service processor enters recovery mode (indicated by A1FD 0000 in the display), attempt to update the firmware again in recovery mode. If the service processor comes up to the OK prompt, try again to update the firmware using the service processor menus. 2. Call service support.
91C4	Flash update pending, either a firmware update or hypervisor dump.	This checkpoint may be displayed during the firmware update process. The checkpoint may be displayed for a long period of time during the process. If process does not complete, the system may be hung. See note 1 on page 311.
91FF	Control being handed to system processor from service processor	See note 1 on page 311.
9200	Scan interface BATs	See note 1 on page 311.
9300	Logic BIST	See note 1 on page 311.
9301	Scanned ABIST	See note 1 on page 311.

Checkpoint	Description	Action/ Possible Failing FRU
9302	Dedicated ABIST	See note 1 on page 311.
9303	Dedicated ABIST array fuse repair calculation	See note 1 on page 311.
9380	Built-in-self-test (BIST)	See note 2 on page 311.
9400	Service processor is requesting system flush	See note 1 on page 311.
9410	Service processor is issuing request to start instruction execution	See note 1 on page 311.
9411	Service processor is issuing request to stop instruction execution	See note 1 on page 311.
9420	Service processor is issuing request to start system clocks	See note 1 on page 311.
9421	Service processor is issuing request to stop system clocks	See note 1 on page 311.
94B0	Wire test faulty driver status refcode	See note 2 on page 311.
94B1	Wire test shorted net status refcode	See note 2 on page 311.
94B2	Wire test elastic interface test	See note 2 on page 311.
94BB	Wire test starting	See note 2 on page 311.
9501	IPL diagnostic initialization	See note 2 on page 311.
9502	IPL diagnostic L3 cache march test	See note 2 on page 311.
9503	IPL diagnostic L3 connections test	See note 2 on page 311.
9504	IPL diagnostic L2 cache march test	See note 2 on page 311.
9505	IPL diagnostic RIO wrap test	See note 2 on page 311.
9506	IPL diagnostic cleanup	See note 2 on page 311.
9507	IPL diagnostic test	See note 2 on page 311.
9508	IPL diagnostic main storage march test	See note 2 on page 311.
9509	IPL diagnostic main storage connections test	See note 2 on page 311.
950A	IPL diagnostic elastic interface slack test	See note 2 on page 311.
950B	IPL diagnostic fast initialization to zeros	See note 2 on page 311.
96C2	IPL MOPs processor configuration	See note 2 on page 311.
96C3	IPL MOPs main storage size	See note 2 on page 311.
96C4	IPL MOPs main storage configuration	See note 2 on page 311.
96C6	IPL MOPs I/O configuration	See note 2 on page 311.
96C7	IPL MOPs: enable chip machine checks	See note 2 on page 311.
96E1	Initialize run-time PRD objects and memory	See note 2 on page 311.
96E2	Run-time initialization: enable attention handling	See note 2 on page 311.
96EE	Firmware update module corrupted	See note 3 on page 311.

Checkpoint	Description	Action/ Possible Failing FRU
99FD	Service processor receiving firmware update module	See note 3 on page 311. **Attention:** This checkpoint may stay in the operator panel for some period of time during a firmware update or hypervisor dump with no indication of activity. Do not assume that the service processor is hung unless this checkpoint has been in the operator panel for at least 15 minutes. with no indication of activity. **Attention:** Do not remove power from the system, or reset the service processor, during a firmware update or hypervisor dump.
99FF	Service processor writing firmware update module	See note 3 on page 311. **Attention:** This checkpoint may stay in the operator panel for some period of time during a firmware update or hypervisor dump with no indication of activity. Do not assume that the service processor is hung unless this checkpoint has been in the operator panel for at least 15 minutes. with no indication of activity. **Attention:** Do not remove power from the system, or reset the service processor, during a firmware update or hypervisor dump.
A800	Start Service Processor dump process	See note 1 on page 311.
A801	Start dump to NVRAM	See note 1 on page 311.
A802	Start dump to debug port	See note 1 on page 311.
A803	NVRAM not usable	See note 1 on page 311.
A804	NVRAM dump done	See note 1 on page 311.
A805	Start dump to flash	See note 1 on page 311.
A806	Flash dump area done	See note 1 on page 311.
A807	Flash area not usable	See note 1 on page 311.
A808	Flash error log to debug port	See note 1 on page 311.
A809	Flash erase start	See note 1 on page 311.
A80A	Flash erase end	See note 1 on page 311.
A80B	Reserved; not used	See note 1 on page 311.
A80C	Reserved; not used	See note 1 on page 311.
A80D	Reserved; not used	See note 1 on page 311.
A80E	Reserved; not used	See note 1 on page 311.
A80F	Service processor dump done	See note 1 on page 311.

Checkpoint	Description	Action/ Possible Failing FRU
A810-A8FF	Scan log dump in progress	Informational message. (See "Scan Log Dump Policy" on page 688.) The last two characters of the checkpoints will change as the scan log dump progresses. If the last two characters do not change after five minutes, the service processor is hung and must be reset. Follow the procedure outlined in Note 1 following this table. When the scan log dump is complete, depending on how the reboot policy is set, the system will either: • Go to the standby state (and the service processor menus will be available), indicated by OK or STBY in the operator panel, OR • Attempt to reboot.
B0F5	Delayed power-off sequence has begun	See note 1.
B0FA	Delayed power-off acknowledged	See note 1.
B0FF	Power-off requested program executing	See note 1.

Notes:

1. If the system fails to progress after this checkpoint is put in the display, do the following:
   a. Activate the service processor pinhole reset switch on the system's operator panel.
   b. If the hang repeats, check with service support to see if there is a firmware update that fixes the problem.
   c. If not, or the update does not fix the problem, replace the primary I/O book, location: U1.18-P1-H2.
   d. If this procedure does not fix the problem, call service support.

2. If the system fails to progress after this checkpoint is put in the operator display, do the following:
   a. Activate the service processor pinhole reset switch on the system's operator panel.
   b. Reboot the system in slow mode. (Slow/fast IPL is set using a service processor menu.) If the hang repeats, check with service support to see if there is a system firmware update that fixes this problem.
   c. If not, or the update does not fix the problem, call service support.

3. Recovery mode flash update has failed. Do the following:
   a. Activate the service processor pinhole reset switch on the system's operator panel and try the recovery mode flash update again.
   b. If the system hangs again, make a new set of firmware update diskettes, using new, blank diskettes. Retry the flash update with the new diskettes.
   c. If the same hang occurs with the new diskettes, replace the following FRUs one at a time in this order:
      1) Diskette drive
      2) Primary I/O book, location: U1.18-P1-H2.
   d. If this procedure does not fix the problem, call service support.

4. The service processor was unable to configure the modem(s) attached to the serial port(s) on the primary I/O book (a problem with the modem attached to the HMC is not indicated). Do the following:
   a. Check the modem, modem cable, and serial port for loose or unconnected cables. Reset the service processor using the pinhole reset switch on the system's operator panel.

b. If the hang repeats, check with service support to see if there is a firmware update that fixes the problem.
c. If there is not, or the update does not fix the problem, replace the following FRUs, one at a time, in the following order:
    1) Modem cable
    2) Modem
d. If this procedure does not fix the problem, call service support.

Firmware Checkpoints

Firmware uses checkpoints (progress codes) in the range of Exxx to EFFF. These checkpoints occur during system startup and can be useful in diagnosing certain problems. Service processor checkpoints are listed in "Service Processor Checkpoints" on page 306.

If you have a checkpoint with no location code associated with it, see "Determining Location Code" on page 343. If a checkpoint has a location code associated with a FRU replacement, see "AIX and Physical Location Code Reference Tables" on page 54 for physical location information.

If you replace FRUs and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless otherwise indicated in the tables.

Note: If you receive a four-digit code in the range of E1xx to EFFF that is not listed in the following table, go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints

Checkpoint	Description	Action/ Possible Failing FRU
E101	Create RTAS node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E102	Load/Init RTAS	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E105	Transfer control to Operating System (normal boot).	See "Boot Problems" on page 338.
E10A	Load RTAS device tree	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E10B	Set RTAS device properties	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E111	GOOD CRC - jump to composite image	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E120	Initialize I/O and early memory block	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E121	Initialize service processor	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E122	RTAS sensor setup complete	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E130	Build device tree	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E131	Build device tree	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E132	Build device tree, just before setting up root node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E133	Build device tree, just before setting up CPUs	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E134	Create memory node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E135	Configuring memory nodes	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E138	Create options node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E139	Create node aliases and system aliases	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E13A	Create packages node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E140	Operating system load	See "Boot Problems" on page 338.
E145	Early debug code activated; firmware is halted	Press the g key on the serial interface.
E149	Create boot mgr node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E14C	Create terminal-emulator node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E14D	Loading boot image	See "Boot Problems" on page 338.
E150	Create host (primary) PCI controller node	If a location code is specified, replace the adapter at that location code. If no location code is specified, go to "MAP 1542: I/O Problem Isolation" on page 261.
E151	Probing primary PCI bus	If a location code is specified, replace the adapter at that location code. If no location code is specified, go to "MAP 1542: I/O Problem Isolation" on page 261.
E152	Probing for adapter FCODE, evaluate if present	Follow the repair action listed for checkpoint E151.
E153	End adapter FCODE, probe/evaluate	Follow the repair action listed for checkpoint E151.
E154	Create PCI bridge node	Follow the repair action listed for checkpoint E151.
E155	Probing PCI bridge secondary bus	Follow the repair action listed for checkpoint E151.
E156	Create PCI Ethernet node	If a location code is specified, replace the adapter at that location code. If no location code is specified, go to "MAP 1542: I/O Problem Isolation" on page 261.
E158	System firmware waiting for virtual terminal to be opened on HMC for SMS menu to be displayed	Open a virtual terminal window on the HMC.
E15B	Transferring control to operating system (service mode boot)	See "Boot Problems" on page 338.
E15F	Adapter VPD probe	Follow the repair action listed for checkpoint E151.
E170	Start of PCI Bus Probe	Follow the repair action listed for checkpoint E151.
E172	First pass of PCI device probe	Follow the repair action listed for checkpoint E151.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E174	Establishing host connection	If the system is not connected to an active network, or if the target server is inaccessible (which can result from incorrect IP parameters being specified), the system still attempts to boot and because time-out durations are necessarily long to accommodate retries, the system may appear to hang. Restart the system and get to the SMS utilities menu. In the multi-boot menu, verify: • Is the intended boot device correctly specified in the boot list? • Are the IP parameters correct? • Look at the server configuration for this client. • Attempt to ping the target server using the ping utility in SMS.
E175	BootP request	Follow the repair actions for checkpoint E174.
E176	TFTP file transfer	Follow the repair actions for checkpoint E174.
E177	Transfer failure due to TFTP error condition	See "Boot Problems" on page 338.
E17B	Processor clock speed measurement	Call service support.
E183	Service Processor POST	1. Replace the service processor, location: U1.18-P1-H2. 2. Go to "MAP 1541: JTAG Problem Isolation" on page 253.
E18D	A system reset request has been sent to the service processor	1. Check for system firmware updates. 2. Call service support.
E191	Create ISA reserved node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E199	Evaluating the RIO interface speed set by the user in the service processor menu	1. Check for system firmware updates. Apply if available. 2. Call service support.
E19A	NVRAM auto-boot? variable not found - assume FALSE	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E19B	NVRAM menu? variable not found - assume FALSE	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E19D	Create NVRAM node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E19E	Real-time clock (RTC) initialization	Refer to error code 28030xxx in "Firmware/POST Error Codes" on page 404.
E1A0	User requested boot to SMS menus via keyboard entry	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E1A1	User requested boot to open firmware prompt via keyboard entry	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A2	User requested boot using default service mode boot list via keyboard entry	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A3	User requested boot using customized service mode boot list via keyboard entry	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A4	User requested boot to SMS menus via HMC or CSP command	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A5	User requested boot to open firmware prompt via HMC or CSP command	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A6	User requested boot using default service mode boot list via HMC or CSP command	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A7	User requested boot using customized service mode boot list via HMC or CSP command	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A8	System booting to open firmware prompt	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1A9	System booting to SMS menus	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1AA	System NVRAM settings during boot	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1AB	System booting using default service mode boot list	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1AC	System booting using customized service mode boot list	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1AD	System booting to operating system	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1AE	System booted to multiboot menu via NVRAM settings	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1AF	System booted to utilities menu via NVRAM settings	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1B1	Create serial node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E1B2	XOFF received - waiting for XON	1. The system firmware is waiting for a virtual terminal to be opened on the HMC. Open a virtual terminal. 2. If a virtual terminal is open, the user might have entered a CTRL-S key sequence to stop the scrolling of data off of the screen. If this is the case, enter a CTRL-Q key sequence to resume scrolling. 3. Check the serial connection between the HMC and the managed system. 4. Reboot the HMC. 5. There may be a hardware problem with the HMC. Refer to the *Hardware Management Console Installation and Operations Guide*. 6. There may be a hardware problem with the service processor in the managed system. Check the service action event log in Service Focal Point for error codes that indicate a problem with the serial ports on the service processor. The service processor is in the primary I/O book at the U1.18-P1-H2 location. Take the appropriate actions based on the error codes that are found.
E1B3	XON received	This checkpoint will flash by too quickly to be seen on the operator panel. It may be recorded in the progress indicators log, which is accessed using the service processor menus. If a partition hangs on this checkpoint, complete the following: 1. Check for platform firmware updates. Apply if available. 2. Call service support.
E1B6	Probe for (ISA) keyboard	Replace the primary I/O book, Location: U1.18-P1-H2.
E1BD	Probe for (ISA) mouse	Replace the primary I/O book, Location: U1.18-P1-H2.
E1C4	Build ISA timer chip node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1C5	Create ISA interrupt controller (pic) node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1C6	Create DMA node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1D0	Create PCI SCSI node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1D3	Create SCSI block device node (SD)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E1D4	Create SCSI byte device node (ST)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1DB	Create floppy controller (FDC) node	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1DC	Dynamic console selection.	1. If a console is attached, but nothing is displayed on it, go to "All display problems" in the Entry MAP. 2. If selection screens can be seen on the terminals and the appropriate key on the input device is pressed within 60 seconds but there is no response to the keystroke: a. If selecting the console with a keyboard attached to a USB card, replace the keyboard, then replace the USB card. b. If selecting the console with an ASCII terminal, suspect the terminal. Use the problem determination procedures for the terminal. **Note:** Terminal setting should be: • 9600 baud • no parity • 8 data bits • 1 stop bit
E1F0	Start O.B.E.	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
E1F1	Begin selftest sequence on boot devices.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E1F2	Power-on password prompt	The prompt should be visible on the firmware console (usually a VTERM on the HMC). If a console is attached but nothing is displayed on it, go to the "Entry MAP" on page 107 with the symptom "All display problems."
E1F3	Privileged-access password prompt	The prompt should be visible on the firmware console (usually a VTERM on the HMC). If a console is attached but nothing is displayed on it, go to the "Entry MAP" on page 107 with the symptom "All display problems."
E1F4	End self-test sequence on boot devices; begin SMS.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E1F5	Build boot device list	Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E1F6	Determine boot device sequence	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E1F7	No boot image located	Go to "Boot Problems" on page 338.
E1F8	Partition (system firmware) is waiting for a virtual terminal to be opened on HMC.	Open a virtual terminal for the partition on the HMC. If the partition hangs at this checkpoint after a virtual terminal is opened on the HMC: 1. Replace the service processor/RIO book, location: U1.18-P1-H2 2. Call service support.
E1FA	Building boot device list for SCSI adapters. (The device ID and the device LUN being scanned code are also displayed.)	1. If a location code is available, follow the actions listed for error code 21A0 00xx. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E1FB	Scan SCSI bus for attached devices	1. If a location code is available, follow the Repair actions listed for error code 21A0 00XX. 2. If no location code is available, go to "MAP 1542: I/O Problem Isolation" on page 261.
E1FC	Building boot device list for SSA adapters. The location code of the SSA adapter being scanned is also displayed.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E1FD	The operator panel alternates between the code E1FD and another Exxx code, where Exxx is the point at which the error occurred.	1. If a location code is available, follow the actions listed for error code 21A0 00xx. 2. If no location code is available, go to "MAP 1542: I/O Problem Isolation" on page 261.
E1FE	Building boot device list for fibre-channel adapters. (The WWPN of the SAN adapter being scanned is also displayed.)	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E1FF	Building boot device list for fibre-channel adapters. (The WWPN of the SAN adapter being scanned is also displayed.)	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E20F	System firmware has exited to open firmware prompt.	1. Replace the primary I/O book, Location: U1.18-P1-H2. 2. Call service support.
E440	Validate NVRAM, initialize partitions as needed	1. Check for system firmware updates. 2. Replace the primary I/O book, Location: U1.18-P1-H2. 3. Call service support.
E441	Generate /options node NVRAM configuration variable properties	1. Check for system firmware updates. 2. Replace the primary I/O book, Location: U1.18-P1-H2. 3. Call service support.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E442	Validate NVRAM partitions	1. Check for system firmware updates. 2. Replace the primary I/O book, Location: U1.18-P1-H2. 3. Call service support.
E443	Generate NVRAM configuration variable dictionary words	Suspect a system firmware problem if problem persists. If a system firmware update is available, install it.
E500	Begin I/O drawer configuration	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E501	Initialize I/O data structures	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E502	Set up I/O data structure pointers	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E503	Initialize location code data structures	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E504	Initialize memory map data structures	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E505	Enable the time base for all RIO hubs	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E506	Reset time base of processors	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E507	I/O hub assignment	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E508	Begin initializing I/O hubs	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E509	Begin configuring EADS chips in I/O subsystems	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E50A	Check for missing I/O interface chips	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E50B	Save I/O hub information	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E50C	Copy all of the memory ranges	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E50D	Copy all of the I/O data	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E50E	Copy all of the I/O hub information	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E50F	Clean up the error registers	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E51F	End of I/O configuration	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E520	Set up the I/O architecture registers	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E521	Set up interrupts for the current I/O hub	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E522	Set up miscellaneous registers for the current I/O hub	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E523	Initialize data structures and enable all I/O hub ports	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E524	Determine I/O configuration of current I/O hub	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E525	Set up the ETE of the current I/O hub	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E526	Reassign the I/O subsystems to the nearest I/O hub	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E527	Enable the memory map and I/O map for the current I/O hub port	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E528	Begin search for the next available I/O drawer from a current RIO port	1. Check the RIO cable specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, check the RIO cables going into and out of the I/O subsystem. 2. Replace the RIO cables specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, replace the RIO cables going into and out of the I/O subsystem. 3. Replace the I/O book specifed by the location code, or the I./O book that the RIO cables in step 1 are attached to. 4. Replace the I/O subsystem backplane specified by the location code, or the I/O subsystem backplane that the RIO cables in step 1 are attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E529	Enable the control port and driver of the current RIO hub	1. Check the RIO cable specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, check the RIO cables going into and out of the I/O subsystem. 2. Replace the RIO cables specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, replace the RIO cables going into and out of the I/O subsystem. 3. Replace the I/O book specifed by the location code, or the I./O book that the RIO cables in step 1 are attached to. 4. Replace the I/O subsystem backplane specified by the location code, or the I/O subsystem backplane that the RIO cables in step 1 are attached to.
E52A	Search for the next available I/O drawer from a current RIO port	1. Check the RIO cable specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, check the RIO cables going into and out of the I/O subsystem. 2. Replace the RIO cables specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, replace the RIO cables going into and out of the I/O subsystem. 3. Replace the I/O book specifed by the location code, or the I./O book that the RIO cables in step 1 are attached to. 4. Replace the I/O subsystem backplane specified by the location code, or the I/O subsystem backplane that the RIO cables in step 1 are attached to.
E52B	The RIO cable connected to the RIO port has been detected	1. Check the RIO cable specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, check the RIO cables going into and out of the I/O subsystem. 2. Replace the RIO cables specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, replace the RIO cables going into and out of the I/O subsystem. 3. Replace the I/O book specifed by the location code, or the I./O book that the RIO cables in step 1 are attached to. 4. Replace the I/O subsystem backplane specified by the location code, or the I/O subsystem backplane that the RIO cables in step 1 are attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E52F	End of configuration of the RIO hub	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E530	Checking I/O hub ports on current I/O hub	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E531	Get I/O hub node ID	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E532	I/O cable detected; enable the I/O hub port	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E533	Set up the I/O hub routing table	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E534	Get the node ID of the node on the other end of the I/O cable	1. This error code may indicate that the I/O (RIO) cables are not properly connected to the I/O subsystems. Check the RIO cabling; refer to "I/O Book Connector Locations" on page 19 and "Subsystem Positioning and Cabling" on page 34. 2. Replace the RIO cable specified by the location code. 3. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 4. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 5. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E535	Valid node ID detected at other end of the I/O cable	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E536	I/O subsystem detected at other end of the I/O cable	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E537	Configuring the I/O subsystem	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E538	Detected the I/O hub at other end of the I/O cable	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E539	Enabling the I/O hub ports	1. Check for system firmware updates. 2. Replace the I/O book specified by the location code. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E53A	Set up the RIO port speed of the exit port of the I/O subsystem connected to the RIO hub port	1. Replace the RIO cable specified by the location code. 2. Replace the I/O book that the failing drawer is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the RIO cable in step 1 is attached to. 4. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E53B	End of looking for next node port	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E53C	End of looking for next RIO hub port	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E53D	Disable the anynode mode	Replace the I/O subsytem backplane that the RIO cable specified by the location code is attached to.
E540	Begin initialization of I/O subsystem	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E541	Initialize the routing table	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E544	Enable the I/O ports	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E545	Set up the device routing address for this new node ID	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E546	Set up the I/O interface chip new node ID	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E547	Set up the I/O interface chip routing table	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E548	Disable any node mode	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E549	Adjust I/O hub table	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E54A	Configure the I/O drawer	1. Check the RIO cable specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, check the RIO cables going into and out of the I/O subsystem. 2. Replace the RIO cables specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, replace the RIO cables going into and out of the I/O subsystem.
E54B	Update the I/O drawer routing table of RIO ports	1. Check the RIO cable specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, check the RIO cables going into and out of the I/O subsystem. 2. Replace the RIO cables specified by the location code. If the location code specifies an I/O subsystem or its RIO interface, replace the RIO cables going into and out of the I/O subsystem.
E550	Begin to initialize I/O interface chip	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E551	Set up the I/O speed	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E552	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E553	Set up the I/O interface chip base address	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E554	Set up more I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E555	Set up the I/O interface chip I/O link	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E556	Set up and initialize I/O interface chips under current I/O interface chip	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E55F	End of I/O drawer initialization	1. Replace the I/O cable specified by the location code. 2. Replace the I/O book that the failing I/O subsystem is attached to, U1.18-P1-Hx. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E560	Begin initializing the I/O subsystem	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E561	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E562	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E563	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E564	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E565	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E566	Enable device arbitration on the I/O interface chip	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E567	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E568	Set up the external interrupt vector register	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E569	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E56A	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E56B	Set up I/O interface chip registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E56C	Set up I/O interface chip PCI bus	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E56D	Identify devices on current bus	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E56E	Begin initializing the service processor control chip	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E56F	End initializing the service processor control chip	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E570	Initialize the PCI-ISA bridge chip	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E571	Initialize the integrated Ethernet (if present)	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E572	Initialize the integrated SCSI	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E57F	End of I/O interface chip initialization	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E580	Begin initializing the EADS module	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E581	Read the PCI bus configuration header	1. This error code may indicate that the I/O (RIO) cables are not properly connected to the I/O subsystems. Check the RIO cabling; refer to "I/O Book Connector Locations" on page 19and "Subsystem Positioning and Cabling" on page 34. 2. Replace the RIO cable specified by the location code. 3. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E582	EADS has been detected	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E583	Running BIST on the current EADS	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E584	Checking function of current EADS	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E585	Valid function of current EADS detected	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E586	Set up EADS function	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E587	Set up EADS BIST	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E588	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E589	Set up EADS function	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E58A	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E58B	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E58C	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E58D	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E58E	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E58F	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E590	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E591	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E592	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E593	Set up EADS function registers	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E594	Begin probing slots	1. Replace the I/O cable specified by the location code. 2. Replace the I/O subsystem backplane that the I/O cable in step 1 is attached to.
E595	Detected valid adapter in slot	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E596	Read the EADS revision ID and class code	1. Replace the RIO cable specified by the location code. 2. Replace the I/O subsystem planar to which the RIO cable in Step 1 is attached.
E59E	End of walking bus of current EADS	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E59F	End of EADS initialization	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E0	Initialize system processor array	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E1	Reserved	
E5E2	Initialization of the hypervisor, phase 1	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E3	Not in quick-restart: load and set up open firmware code in memory	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E4	Activate slave processors	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E5	Initialize the hypervisor, phase 2	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E6	Set L2 and processor status	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E7	Save I/O hub information for RTAS and open firmware	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E8	Set up registers	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5E9	Reset the quick restart path	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
E5EE	Hang state in main control code	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E5EF	End of low-level firmware	1. Replace the I/O drawer subsystem backplane specified by the location code. 2. Power down, then power up the system using the UEPO switch. 3. Call service support.
E5FE	Get the system's licensed memory quantity from the service processor	1. Disconnect and then reconnect AC power to the system using the UEPO switch. 2. Verify that the CUoD capacity card is installed and properly seated. 3. Call service support.
E600	SSA PCI adapter open firmware has run successfully.	Replace the adapter.
E601	SSA PCI adapter BIST has started but failed to complete after 4 seconds.	Replace the adapter.
E602	SSA PCI open firmware has started.	Replace the adapter.
E603	SSA PCI adapter BIST has completed with an error.	Replace the adapter.
E604	SSA PCI adapter BIST and subsequent POSTs have completed successfully.	Replace the adapter.
E605	SSA PCI adapter BIST has completed successfully but subsequent POSTS have failed.	Replace the adapter.
E60E	SSA PCI open firmware about to exit (no stack corruption).	Replace the adapter.
E60F	SSA PCI open firmware has run unsuccessfully.	Replace the adapter.
E6FF	SSA PCI open firmware about to exit (with stack corruption).	Replace the adapter.
E700	Create system firmware VPD	System firmware may be corrupted. Reinstall system firmware.
E701	Create memory VPD.	1. Check for system firmware updates. 2. Call for support.
E702	Create processor card VPD.	1. Check for system firmware updates. 2. Call for support.
E703	Create operator panel VPD.	1. Check for system firmware updates. 2. Call for support.
E704	Create processor subsystem VPD.	1. Check for system firmware updates. 2. Call for support.
E705	Create clock card VPD.	1. Check for system firmware updates. 2. Call for support.
E706	Create RIO extender card VPD.	1. Check for system firmware updates. 2. Call for support.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E707	Create system VPD.	1. Check for system firmware updates. 2. Call for support.
E708	Create RIO to PCI adapter VPD.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E709	Create VPD via SPCN.	1. Check for system firmware updates. 2. Call service support.
E70A	Create service processor VPD.	1. Check for system firmware updates. 2. Call for support.
E70B	Create L3 module VPD	1. Check for system firmware updates. 2. Call service support.
E70C	Create I/O backplane VPD (I2C problem)	Go to "MAP 1542: I/O Problem Isolation" on page 261.
E70D	Create capacitor book VPD	1. Check for system firmware updates. 2. Call service support.
E70F	Create CEC VPD	1. Check for system firmware updates. 2. Call service support.
E7EE	Delaying while waiting for power subsystem VPD collection to be completed; informational only	1. Check for system firmware updates. 2. Call service support.
E7FF	Successful end of VPD creation	Informational message. If the system hangs here, go to "MAP 1541: JTAG Problem Isolation" on page 253.
E800	RTAS initialization problem	1. Check for system firmware updates. 2. Call service support.
E841	Initializing RTAS/open firmware device tree interface	1. Check for system firmware updates. 2. Call service support.
E842	Initializing RTAS/service processor interface	1. Check for system firmware updates. 2. Replace the primary I/O book Location: U1.18-P1-H2. 3. Call service support.
E843	Initializing RTAS/sensor interface	1. Check for system firmware updates. 2. Call service support.
E844	Initializing RTAS/time-of-day clock interface	1. Check for system firmware updates. 2. Replace the primary I/O book Location: U1.18-P1-H2. 3. Call service support.
E845	Initializing interface/sensor access	1. Check for system firmware updates. 2. Call service support.
E846	Initializing interface/sensors/led_table access	1. Check for system firmware updates. 2. Call service support.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E84F	Initializing RTAS/operator panel interface	1. Check for system firmware updates. 2. Call service support.
E850	Initializing RTAS/cache interface	1. Check for system firmware updates. 2. Call service support.
E851	Initializing RTAS/hardware access	1. Check for system firmware updates. 2. Call service support.
E852	Initializing RTAS/PCI bus interface	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261. 3. Call service support.
E853	Start cable ID request process	1. Check the SPCN and RIO cabling to the I/O subsystems 2. Disconnect then reconnect power to the system. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261. 4. Call service support.
E854	Start collecting cable IDs	1. Check the SPCN and RIO cabling to the I/O subsystems 2. Disconnect then reconnect power to the system. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261. 4. Call service support.
E855	Start setting RIO link speed	1. Check the SPCN and RIO cabling to the I/O subsystems 2. Disconnect then reconnect power to the system. 3. Go to "MAP 1542: I/O Problem Isolation" on page 261. 4. Call service support.
E860	Initializing RTAS/power subsystem interface	1. Check for system firmware updates. 2. Call service support.
E861	Initializing RTAS/PCI bus interface	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261 3. Call service support.
E870	Initializing RTAS/logs interface	1. Check for system firmware updates. 2. Call service support.
E871	Initializing RTAS/EEH handling interface	1. Check for system firmware updates. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261. 3. Call service support.

Table 1. Firmware Checkpoints (continued)

Checkpoint	Description	Action/ Possible Failing FRU
E872	Initializing RTAS/error inject interface	1. Check for system firmware updates. 2. Call service support.
E873	Initializing RTAS/error handling interface	1. Check for system firmware updates. 2. Call service support.
E880	Initializing RTAS/debug interface	1. Check for system firmware updates. 2. Call service support.
E881	Initializing RTAS/utility interface	1. Check for system firmware updates. 2. Call service support.
E882	Initializing RTAS/softpatch register interface	1. Check for system firmware updates. 2. Call service support.
E890	Initializing RTAS/hot-plug interface	1. Check for system firmware updates. 2. Call service support.
E8C1	Initializing interface/client memory access	1. Check for system firmware updates. 2. Call service support.
E8D1	Initializing interface/special memory access	1. Check for system firmware updates. 2. Call service support.
EAA1	Probe PCI-PCI bridge bus	Follow the repair actions for checkpoint E151.

Boot Problems

Attention: If the system is running partitions from partition standby (LPAR), the following procedure addresses the problem in which one partition will not boot while other partitions boot successfully and run the operating system successfully.

This procedure also addresses the problem in which a system does not boot to a full system partition. All of the system's resources are available to the diagnostics; the same general procedure applies, with the exception of moving resources between partitions.

Attention: It is the customer's responsibility to move devices between partitions. If a device must be moved to another partition to run standalone diagnostics, contact the customer or system administrator. (If the CD-ROM must be moved to another partition, all SCSI devices connected to that SCSI adapter must be moved because moves are done at the slot level, not at the device level.) Both partitions must be rebooted if a device is moved between partitions.

Depending on the boot device, a checkpoint may be displayed on the operator panel for an extended period of time while the boot image is retrieved from the device. This is particularly true for tape and network boot attempts. If the checkpoint/code is displayed for an extended time, there may be a problem loading the boot image from the device. If booting from CD-ROM or tape, watch for activity on the drive's LED indicator. A blinking LED indicates that the loading of either the boot image, or additional information required by the operating system being booted, is still being loaded.

For network boot attempts, refer to checkpoint E174.

If the checkpoint is displayed for an extended time, there may be a problem with the integrity of the boot image.

This procedure assumes that a CD-ROM drive is connected to the system, or that the diagnostics can be run from a NIM (Network Installation Management) server.

1. Look at the service action event-error log in the Service Focal Point on the HMC (see "Service Focal Point" on page 4 for instructions on accessing the service action event log). If there are open entries that affect devices in the boot path of the partition, perform the actions to correct those errors. If there are open entries that indicate problems with I/O cabling, perform the actions to correct those problems. Try to reboot the partition.

   If the partition hangs with a 4-character checkpoint in the display, the partition must be deactivated, then reactivated before attempting to reboot.

   If a 20EE xxxx error code is reported, the partition is already deactivated and in the error state. Reboot by activating the partition. If the system is running in full system partition, the power must be cycled before the system can be rebooted. If the reboot is still not successful, continue to step 2.

2. Boot to the SMS main menu as follows:

   - If you are rebooting a partition from partition standby (LPAR), go to the properties of the partition and select **Boot to SMS**, then activate the partition.
   - If you are rebooting the system in full system partition, start the service processor menus, select option 2, **System Power Control Menu**, then select option 7, **Boot Mode Menu**, then select option 1, **Boot to SMS menu**. Enter 98 to return to the system power control menu, then select option 4, **Power-on System**. Enter y to confirm.

   At the SMS main menu, select **Multiboot**.
   a. Check to see if the intended boot device is correctly specified in the boot list. If it is in the boot list:
      1) Remove all removable media from devices in the boot list from which you do not want to boot.
      2) If attempting to boot from a network, go to step 3 on page 339.

         If attempting to boot from a disk drive or CD-ROM, go to step 4 on page 339.

b. If the intended boot device is not correctly listed in the boot sequence, add it to the boot sequence using the SMS menus. If the device can be added to the boot sequence, reboot the partition. If the intended boot device cannot be added to the boot list, ask the customer or system administrator to verify that the device you are trying to boot from is assigned to the correct partition. If it is, go to step 4.

3. If attempting to boot from the network:

   a. Verify that the IP parameters are correct.

   b. Attempt to ″ping″ the target server using the SMS ping utility. If the ping is not successful, have the network administrator verify the server configuration for this client.

   c. Check with the network administrator to ensure that the network is up. Also ask the network administrator to verify the settings on the server from which you are trying to boot.

   d. Check the network cabling to the adapter.

   e. Restart the partition and retry the boot operation.

4. Try to boot and run standalone diagnostics against the devices in the partition, particularly against the intended boot device. Standalone diagnostics can be run from CD-ROM or a NIM server. To boot standalone diagnostics, follow the detailed procedures in "Loading the Standalone Diagnostics from CD-ROM Using an HMC" on page 674 or "Running Standalone Diagnostics from a Network Installation Management (NIM) Server" on page 675.

   Attention: Standalone diagnostics may be run on systems configured for either full system partition or partition standby. When attempting to boot diagnostics on a partition from partition standby, the device from which you are booting standalone diagnostics must be made available to the partition that is not able to boot, if it is not already in that partition. Contact the customer or system administrator if a device must be moved between partitions in order to boot standalone diagnostics. If devices are moved between partitions, both partitions must be rebooted. For more information, see "Standalone Diagnostic Operation" on page 674.

   If standalone diagnostics boot successfully:

   a. Go to the Task Selection menu, and select **Display Configuration and Resource List**. If the intended boot device is not listed, ask the customer or system administrator to verify that it is assigned to the correct partition. If it is, and does not appear in the NEW RESOURCE list, go to ″MAP 0290: Missing Resource Problem Resolution″ in the *Diagnostic Information for Multiple Bus Systems*.

   b. Run diagnostics on the device you want to boot from. If an SRN, not an 8-digit error code, is reported, go to the *Diagnostic Information for Multiple Bus Systems*.

   c. If the diagnostics are successful, it may be necessary to perform an operating system-specific recovery process, or reinstall the operating system.

   If standalone diagnostics do not boot successfully from CD-ROM:

   a. Verify that the CD-ROM drive is assigned to the correct partition.

   b. Check the SCSI cabling to the CD-ROM drive. Check the power connector on the CD-ROM.

   c. It is possible that another SCSI device on the same bus is causing the problem. Do the following:

      1) Disconnect the power and signal cables from all other SCSI devices that are attached to the SCSI adapter to which the CD-ROM is attached.

      2) Try to boot standalone diagnostics again.

      3) If you are still unable to load standalone diagnostics, go to step 5 on page 340.

      4) If standalone diagnostics load, one of the disconnected devices is causing the problem. Reconnect the devices one at a time and retry the boot operation until the problem recurs, and replace the device that caused the problem. Go to ″MAP 410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*.

   If standalone diagnostics do not boot successfully from a NIM server:

   a. Verify that the network adapter is assigned to the correct partition.

b. Check the network settings and flag settings, as detailed in "Running Standalone Diagnostics from a Network Installation Management (NIM) Server" on page 675.

c. Follow the procedure outlined in step 3 on page 339.

5. Go to "MAP 1542: I/O Problem Isolation" on page 261.

Chapter 5. Error Code to FRU Index

The Error Code to FRU Index lists fault symptoms and possible causes. The most likely cause is listed first. Use this index to help you decide which FRUs to replace when servicing the system.

Attention: If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154x by the error code. Otherwise, call service support if the action(s) for an error code do not resolve the problem.

Attention: If the error code that brought you to this chapter originated in the AIX error log, remember that an error may require an additional 15 minutes to be propagated to the AIX error log.

If you replace FRUs and the problem is corrected, go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Performing Slow Boot

On this system, the error code displayed in the operator panel or in the service action event (SAE) log may not indicate the root cause of the problem. To fully analyze all of the available information, perform the following steps before doing a hardware repair or replacement:

1. Record the 8-character error code (and location code if present) in operator panel.
2. Do a slow-mode boot into the SMS main menu. (A fast-mode boot skips much of the built-in diagnostic testing.) A slow-mode boot may yield a new 8-character error code on the operator panel or new errors in the service processor error log. If a new error code is reported, record it for use in subsequent steps. Slow mode boot is selected through the service processor menus. The procedure is different for systems without an HMC attached versus systems with an HMC attached.

   - Non-partitioned systems:
     a. Go to the system power control menu from the service processor main menu.
     b. Select option 7, the boot mode menu.
     c. On the boot mode menu, select option 1. This automatically enables **Boot to SMS menus.**
     d. Enter 98 to go back to the system power control menu.
     e. Look at the state of the fast boot enable, option 6. If it is enabled, select option 6 to change it to disabled (disabling fast system boot automatically enables slow mode boot).

        If it is already disabled, it may have been disabled by the service processor because the previous boot failed.

        In either case, boot the system by continuing to substep 2f.
     f. Select option 4 to power on the system. Enter y when prompted. The system will power up and begin the boot process.
     g. When the system stops at the SMS main menu, use the white power button on the operator panel to power down the system.

        At this point, the service processor menus should be available to examine the service processor error logs.
   - Partitioned systems:
     a. From the HMC, select **Partition Manager**.
     b. Highlight the processor subsystem name.
     c. Right-click the mouse and select **Open Terminal Window**.
     d. From the Service Processor Menu on the VTERM select Option 2 **System Power Control Menu**.

e. Select option 6. Verify that the state changes to currently disabled. Disabling fast system boot automatically enables slow boot.

f. Select Option 98 to exit the system power control menu.

g. Use the HMC to power up the system to the SMS menus in a full system partition.

3. When the system has stopped at the SMS menus, use the HMC to power off the system. At this point, the service processor menus should be available to examine the service processor error log.

Confirming Initial Error Code

The service processor may have recorded one or more symptoms in its error log. If the system has attempted to boot since an error terminated normal operation, there may be specific fault information in the service processor error log. Examine this error log before proceeding (see "System Information Menu" on page 694).

In the service processor error log, the most recent error is at the top of the list and the oldest error is at the bottom. It is also important to look at the time stamp associated with each error. (The time stamps in the service processor error log reflect coordinated universal time (UTC), which is also referred to as Greenwich mean time.)

On this system, the error code displayed in the operator panel may not be indicative of the root cause of the problem. This is also true of the most recent error in the service processor error log.

Attempt to find the error code that originally sent you to the "Checkpoints and Error Codes Index" on page 344 table.

1. If you cannot find the error code in the service processor error log, start with the error code at the bottom of the list. Proceed to step 3.

2. If you can find the error code in the service processor error log, observe the time stamps and look for a group of failures that happened within minutes prior to this error code. In this group, start at the error code with the earliest time stamp. Proceed to step 3.

3. Examine the list of error codes you obtained from steps 1 or 2, and look for any of the form 4xxB xxxx.

   Can you find any error codes of the form 4xxB xxxx?

   No   Proceed to step 6.

   Yes Proceed to step 4.

4. Do any of the error codes of the form 4xxB xxxx have the same first two characters on the left as the first two characters on the left of the error code that sent you to the MAP?

   No   Proceed to step 6.

   Yes Proceed to step 5.

5. Adjust the order of the list of error codes you obtained from steps 1 or 2 by placing the error codes of the form 4xxB xxxx with the same first two characters as the error code that sent you to this MAP on the bottom of the list. Proceed to step 6. starting with the codes at the bottom of the adjusted list of error codes.

6. To get a list of possible FRUs, select the detail screen for each error code. Record the listed location codes and their order.

   Note: If the error code that results from this procedure is 406x 0EA0, 406x 0EA1, 406x 0EA2, or 406x 0EA4, do not go back to the "Checkpoints and Error Codes Index" on page 344 with this error code. Look for a hardware error in the service processor error log of the form 450x $yyyy$, 460x $yyyy$, or 4B2x $yyyy$ that occurred just prior to the 406x 0EAy error. Use this hardware error code instead when returning to the "Checkpoints and Error Codes Index" on page 344.

   Return to the step in the "Checkpoints and Error Codes Index" on page 344 table immediately after the step that sent you to this "Confirming Initial Error Code" procedure to perform the listed repair actions.

If the repair actions for an error code are ineffective, continue to work upward through this group of error codes (which is forward in time from the earliest time stamp to the latest) until either the problem is fixed, you reach the error code that was first reported, or you are at the top of the list.

Four-Character Checkpoints

Four-character checkpoints in the form 8xxx, 9xxx, Axxx, Bxxx, and Exxx are listed in "Firmware Checkpoints" on page 313. If you have a four-character code that begins with any character other than 8, 9, A, B, or E, refer to the *Diagnostic Information for Multiple Bus Systems*.

Replacing the Media Subsystem Operator Panel

Licensed programs frequently rely on system information that is stored in the VPD module on the media subsystem's operator panel. If the MAPs indicate that the operator panel should be replaced, the pluggable VPD module must be swapped. If the old module is defective, or cannot be recovered, contact service support.

Replacing the Network Adapter

If a network adapter is replaced, the network administrator must be notified so that the client IP addresses used by the server can be updated. In addition, the operating system configuration of the network controller may need to be changed in order to enable system startup. Also check to ensure that any client or server that accesses this system is updated.

Determining Location Code

If you have an error code in the form 2xxx xxxx or Exxx, and no location code associated with it, the location code may possibly be found in the following places, depending on the state of the system:

- For systems with AIX installed, if the system will boot into AIX, the location code will be reported when error log analysis is run under AIX diagnostics.
- If the system will boot into the system management services (SMS) menus, the SMS error log will contain the location code associated with the error code.
- If the system halted when the error occurred, the error code and location can be found in the LCD progress indicator log, which can be accessed using the service processor menus. See "System Information Menu" on page 694, then select **Read Progress Indicator From Last System Boot**. Find the error code that directed you to this note in the list, and the location code is part of the entry in the log.

Attention: To identify a FRU, these MAPs refer to FRU identify LEDs. For more Information about the FRU identify LEDs see "FRU Identify LEDs" on page 51.

Checkpoints and Error Codes Index

The following table is an index to the checkpoints or error codes that you may receive to help diagnose a failure. Locate the code you received, and follow the instructions to determine your next step.

8-Digit Error Code or 4-Digit Checkpoint	What You Should Do
0000 xxxx	Operator Panel Error Codes Go to "Operator Panel Error Codes" on page 347, and follow the instructions in the operator panel error code table.

1xxx xxxx	System Power Control Network (SPCN) Error Codes
	
	1. There may be additional error codes and information in the service processor error log. The system must be powered off to examine the contents of the service processor error log.
	
	  a. **Is the system still powered on?**
	
	    NO Go to step2 below.
	
	    YES Ask the customer if the system can be powered off, then go to step 1b.
	
	  b. **Can the system be powered off?**
	
	    NO Go to step3 below.
	
	    YES Power off the system, then Go to step2 below.
	
	2. Confirm this is the first error code that caused the failure, as described in "Confirming Initial Error Code" on page 342.
	
	3. Did you come to this step from step 2?
	
	    NO Go to "SPCN Error Codes" on page 348 with the error codes you already have and follow the instructions in the SPCN error code table.
	
	    YES Go to "SPCN Error Codes" on page 348 with the error code(s) from step 2 and follow the instructions in the SPCN error code table.

2xxx xxxx	Firmware Error Codes Go to "Firmware/POST Error Codes" on page 404, and follow the instructions in the firmware error code table.

8-Digit Error Code or 4-Digit Checkpoint	What You Should Do

4xxx xxxx	Service Processor Error Codes
	1. Is the system powered up?
	   NO Go to step 2 below.
	   YES Go to step 4 below.
	2. Find the error code in the service processor error log and check the value of word 13. Go to step 3 below.
	3. Is the value of word 13 C0xx xxxx?
	   NO Go to step 7 on page 346 below.
	   YES Go to "MAP 1541: JTAG Problem Isolation" on page 253.
	4. Is the system running Linux?
	   NO Go to step 6 below.
	   YES Go to step 5 below.
	5. If the system is not functional, go to step 7 on page 346 below.
	
	If the system is functional, do the following:
	
	Examine the Linux system log by logging in to the system as the root user and entering the following command:
	
	`cat /var/log/messages | grep RTAS |more`
	
	Record any RTAS messages found in the Linux system log entry. Ignore all other messages in the Linux system log.
	
	Find the value of word 13 in the Linux system log entry. For detailed instructions on finding word 13 in a Linux system log entry, refer to the actions under error code B1xx 4699 in this service guide.
	
	Is the value of word 13 C0xx xxxx?
	   NO Go to step 7 on page 346 below.
	   YES Go to "MAP 1541: JTAG Problem Isolation" on page 253.
	6. If the system is not functional, go to step 7 on page 346.
	
	If the system is functional, do the following:
	
	Examine the AIX error log entry. Find the value of word 13. For detailed instructions on finding word 13 in a AIX error log entry, refer to the actions under error code B1xx 4699 in this service guide.
	
	Is the value of word 13 C0xx xxxx?
	   NO Go to step 7 on page 346 below.
	   YES Go to "MAP 1541: JTAG Problem Isolation" on page 253.

8-Digit Error Code or 4-Digit Checkpoint	What You Should Do

4xxx xxxx (Cont.)	Service Processor Error Codes
	7. There might be additional error codes and information in the service processor error log. The system must be powered off to examine the contents of the service processor error log.
	  a. Is the system still powered on?
	    NO Go to step 8 below.
	    YES Ask the customer if the system can be powered off, then go to step 7b.
	  b. Can the system be powered off?
	    NO Go to step 10 below.
	    YES Power off the system, then go to step 8.
	8. Perform slow boot procedure as described in "Performing Slow Boot" on page 341.
	9. Confirm this is the first error code that caused the failure as described in "Confirming Initial Error Code" on page 342.
	10. Did you come to this step from step 9?
	    NO Go to "Service Processor Error Codes" on page 430 with the error codes you already have and follow the instructions in the service processor error codes table.
	    YES Go to "Service Processor Error Codes" on page 430 with the error codes from step 9 above and follow the instructions in the service processor error codes table.

8xxx 9xxx Axxx Bxxx	Service Processor Checkpoints Go to "Service Processor Checkpoints" on page 306 for more information on these checkpoints.
A1FD 000x	The system has entered recovery mode. Go to "Recovery Mode" on page 717.
B006 xxxx B1xx xxxx	Common Firmware Error Codes 1. Perform slow boot, as described in "Performing Slow Boot" on page 341. 2. Confirm this is the first error code that caused the failure, as described in "Confirming Initial Error Code" on page 342. 3. Go to "Common Firmware Error Codes" on page 653, and follow the instructions in the Common Firmware Error Codes table.
Exxx	Firmware Checkpoints Go to "Firmware Checkpoints" on page 313 for more information on these checkpoints.
Mxxx xxxx	Problem Determination-Generated Error Codes Go to "Problem Determination-Generated Error Codes" on page 666, and follow the instructions in the error code table.

Operator Panel Error Codes

Attention: If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154*x* by the error code. Otherwise call support if the action(s) for an error code do not resolve the problem.

Attention: If the error code that brought you to this chapter originated in the AIX error log, remember that an error may require an additional 15 minutes to be propagated to the AIX error log.

If you replace FRUs and the problem is corrected, go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Error Code	Description	Action/ Possible Failing FRU
0000 1111	At power on, failure of power-good signal from power supply	1. Primary I/O backplane Location: U1.18-P1-H2 2. DCAs providing power to the primary I/O book Locations: U1.18-P1-V1, U1.18-P1-V2
0000 1112	At power off, failure of power-good signal from power supply	1. Primary I/O backplane Location: U1.18-P1-H2 2. DCAs providing power to the primary I/O book Locations: U1.18-P1-V1, U1.18-P1-V2
0000 1113	While powered on, failure of power-good signal from power supply	1. Primary I/O backplane Location: U1.18-P1-H2 2. DCAs providing power to the primary I/O book Locations: U1.18-P1-V1, U1.18-P1-V2
0000 1114	Operator panel and service processor have been reset after main power disturbance	Informational message
0000 2222	Operator panel not communicating with service processor	1. If system cannot be powered off, reset the service processor (via the pinhole reset or by disconnecting then reconnecting power). 2. Primary I/O book, Location: U1.18-P1-H2
0000 3333	SPCN communications error	Primary I/O book, Location: U1.18-P1-H2
0000 3334	I2C repeater error	Primary I/O book, Location: U1.18-P1-H2
0000 BBBB	Time-of-day battery malfunction	Time-of-day battery Location: U1.18-P1-H2-V1

SPCN Error Codes

Attention: If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154*x* by the error code. Otherwise, call support if the action(s) for an error code do not resolve the problem.

Attention: If the error code that brought you to this chapter originated in the operating system error log, be aware that an error may require an additional 15 minutes to be propagated to the operating system error log.

If you replace FRUs and the problem is corrected, go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Error Code	Description	Action/ Possible Failing FRU
1011 00AC	Last power-down was the result of loss of AC.	Informational message
1011 00CA	Thermal calibration in progress	Has this code been displayed longer than 15 minutes? **YES** Reboot the system. The code will be cleared when the system successfully reboots. **NO** Wait until this code has been displayed for 15 minutes to allow thermal calibration to complete. The system will not IPL while thermal calibration is in progress.
1011 3100	I2C Controller	Primary I/O book Location: U1.18-P1-H2
1011 3101	1. I2C bus 1 fault 2. Operator panel 3. Operator panel cable	1. Primary I/O book Location: U1.18-P1-H2 2. Operator panel Location: U1.17-L1 3. Operator panel cable Location: U1.17-L1/Q1#
1011 3102	I2C bus 2 fault	Primary I/O book Location: U1.18-P1-H2
1011 3104	I2C bus 4 fault	Primary I/O book Location: U1.18-P1-H2
1011 3106	I2C bus 6 fault	Primary I/O book Location: U1.18-P1-H2
1011 3113	RIO Bus Adapter	Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
1011 3114	PCI Backplane	Was the primary I/O book at location U1.18-P1-H2 changed prior to the most recent reboot of the system? **YES** This error code may be due to down-level system power control network firmware on the new primary I/O book. The system will automatically update the system power control network firmware to the correct level. This error code should be cleared after the next reboot. **NO** Replace the primary I/O book, Location: U1.18-P1-H2
1011 3115	Operator Panel	1. Operator panel, location: U1.17-L1 2. Primary I/O book, Location: U1.18-P1-H2
1011 3118	SPCN	Primary I/O book Location: U1.18-P1-H2
1011 34A2	SPCN	Primary I/O book Location: U1.18-P1-H2
1011 8400	VPD Configuration	Primary I/O book Location: U1.18-P1-H2
1011 8401	VPD access problem	1. System VPD module Location: U1.17-L1-N1 2. Primary I/O book Location: U1.18-P1-H2
1011 8402	VPD access problem	Primary I/O book Location: U1.18-P1-H2
1011 8403	VPD level mismatch	1. System VPD module Location: U1.17-L1-N1 2. Primary I/O book Location: U1.18-P1-H2
1011 8404	MCM 2 VPD mismatch	1. MCM 2 and VPD card, Locations: U1.18-P1-C4 and U1.18-P1-H2.4 2. Primary I/O book Location: U1.18-P1-H2
1011 8405	MCM 1 VPD mismatch	1. MCM 1 and VPD card, Locations: U1.18-P1-C3 and U1.18-P1-H2.5 2. Primary I/O book Location: U1.18-P1-H2
1011 8406	MCM 3 VPD mismatch	1. MCM 3 and VPD card, Locations: U1.18-P1-C2 and U1.18-P1-H2.6 2. Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
1011 8408	MCM 0 VPD mismatch	1. MCM 0 and VPD card, locations: U1.18-P1-C1 and U1.18-P1-H2.3 2. Primary I/O book, location: U1.18-P1-H2
1011 8409	No valid processor VPD cards found on primary I/O book	1. Verify that the processor VPD cards are properly installed and in the correct slots on the primary I/O book for the MCMs that are installed. 2. Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
1011 840A	VPD +5 stuck high	Primary I/O book Location: U1.18-P1-H2
1011 840B	VPD 5 V power-on failure	Primary I/O book Location: U1.18-P1-H2
1011 840D	SPCN Configuration mismatch	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1011 840E	SPCN default configuration loaded	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1011 840F	SPCN Configuration mismatch	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1011 8413	Invalid MCM 0 VPD card or MCM	1. Location: U1.18-P1-H2.3 and U1.18-P1-C1 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8414	Invalid MCM 2 VPD card or MCM	1. Location: U1.18-P1-H2.4 and U1.18-P1-C4 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8415	Invalid MCM 1 VPD card or MCM	1. Location: U1.18-P1-H2.5 and U1.18-P1-C3 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8416	Invalid MCM 3 VPD card or MCM	1. Location: U1.18-P1-H2.6 and U1.18-P1-C2 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8423	No MCM 0 VPD card or MCM	1. Location: U1.18-P1-H2.3 and U1.18-P1-C1 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
1011 8424	No MCM 2 VPD card or MCM	1. Location: U1.18-P1-H2.4 and U1.18-P1-C4 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8425	No MCM 1 VPD card or MCM	1. Location: U1.18-P1-H2.5 and U1.18-P1-C3 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8426	No MCM 3 VPD card or MCM	1. Location: U1.18-P1-H2.6 and U1.18-P1-C2 See note on page 430. 2. Primary I/O book Location: U1.18-P1-H2
1011 8430	SPCN configuration mismatch	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1011 8431	SPCN configuration mismatch	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1011 8440	SPCN configuration mismatch	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1011 8441	SPCN configuration mismatch	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2

1011 8468	Capacitor card fault	1. If fewer than 3 DCAs are installed:
		  a. If no capacitor card is installed in U1.18-P1-V3 or U1.18-P1-V7, install a card in U1.18-P1-V3.
		  b. If a capacitor card is present in either U1.18-P1-V3 or U1.18-P1-V7, reseat it. If the problem is not fixed, replace it.
		2. If 3 or more DCAs are installed:
		  a. If no capacitor card is installed in U1.18-P1-V3, one is required.
		  b. If a capacitor card is installed in U1.18-P1-V3, reseat it. If the problem is not fixed, replace it.
		3. If the same error code reoccurs, replace the primary I/O book, location: U1.18-P1-H2.

Error Code	Description	Action/ Possible Failing FRU
1011 8469	Capacitor card fault	1. If no capacitor card is installed in U1.18-P1-V7, install one. The capacitor card is required. 2. If a capacitor card is present in U1.18-P1-V7, reseat it. If the problem is not fixed, replace the capacitor card. 3. If the same error code reoccurs, replace the primary I/O book, location: U1.18-P1-H2.
1011 8700	BPA A ac loss	Go to "MAP 1520: Power" on page 139.
1011 8701	BPA B ac loss	Go to "MAP 1520: Power" on page 139.
1011 8710	BPC A communication failure	1. Go to "MAP 1525: There Is a 350 Volt Bulk Failure" on page 149. 2. BPC A cable to primary I/O book Location: U1.18-P1-H2/Q8# 3. BPC A controller Location: U1.35-P1-X4 4. Primary I/O book Location: U1.18-P1-H2
1011 8711	BPC B communication failure	1. Go to "MAP 1525: There Is a 350 Volt Bulk Failure" on page 149. 2. BPC B cable to primary I/O book Location: U1.18-P1-H2/Q9# 3. BPC B controller Location: U1.35-P2-X4 4. Primary I/O book Location: U1.18-P1-H2
1011 8722	BPC A and B are not at standby.	1. BPC A controller Location: U1.35-P1-X4 2. BPC B controller Location: U1.35-P2-X4
1011 8731	BPC failure	1. Ensure that the red switch on the front of the EPO panel is in the ON position. If there is no external EPO cable, also ensure that the internal toggle switch to the ROOM EPO BYPASS on the bottom of the EPO panel is set to the left before proceeding. 2. BPC A controller Location: U1.35-P1-X4 and BPC-B controller, Location: U1.35-P2-X4 3. Primary I/O book Location: U1.18-P1-H2
1011 8750	BPC download failure on BPA A	1. BPC A controller, Location: U1.35-P1-X4 2. Primary I/O book, Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
1011 8751	BPC download failure on BPA B	1. BPC-B controller, Location: U1.35-P2-X4 2. Primary I/O book, Location: U1.18-P1-H2
1011 8800	BPC A cable missing	1. BPC A cable to primary I/O book Location: U1.18-P1-H2/Q8# 2. BPC A controller Location: U1.35-P1-X4 3. Primary I/O book Location: U1.18-P1-H2
1011 8801	BPC B cable missing	1. BPC B cable to primary I/O book Location: U1.18-P1-H2/Q9# 2. BPC B controller Location: U1.35-P2-X4 3. Primary I/O book Location: U1.18-P1-H2
1011 xxxx	SPCN configuration error	1. Set I/O type to correct value. See "Change I/O Type" on page 698. 2. Primary I/O book Location: U1.18-P1-H2
1014 1B17	Problem with fan 1 in first I/O subsystem in primary rack	1. DCA-1 Location: U1.9-V1 2. Fan 1 Location:U1.9-F1
1014 1B27	Problem with fan 2 in first I/O subsystem in primary rack	1. DCA-2 Location: U1.9-V2 2. Fan 2 Location:U1.9-F2
1014 1C06	Loss of airflow in first I/O subsystem location: U1.9	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1014 6014	Overcurrent or overvoltage problem with 3.3V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6024	Overcurrent or overvoltage problem with 5.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6034	Overcurrent or overvoltage problem with 2.5V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6044	Overcurrent or overvoltage problem with 12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6054	Overcurrent or overvoltage problem with -12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6814	Overcurrent or overvoltage problem with 3.3V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6824	Overcurrent or overvoltage problem with 5.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6834	Overcurrent or overvoltage problem with 2.5V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1014 6844	Overcurrent or overvoltage problem with 12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 6854	Overcurrent or overvoltage problem with -12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 7017	Problem with fan 3 in first I/O subsystem in primary rack	1. DCA-1 Location: U1.9-V1 2. Fan 3 Location:U1.9-F3
1014 7027	Problem with fan 4 in first I/O subsystem in primary rack	1. DCA-2 Location: U1.9-V2 2. Fan 4 Location:U1.9-F4
1014 7117	Problem with fan 1 and fan 3 in first I/O subsystem in primary rack	1. DCA-1 Location: U1.9-V1 2. Fans 1 and 3 Location:U1.9-F1 and U1.9-F3
1014 7127	Problem with fan 2 and fan 4 in first I/O subsystem in primary rack	1. DCA-2 Location: U1.9-V2 2. Fans 2 and 4 Location:U1.9-F2 and U1.9-F4
1014 B014	Overcurrent or overvoltage problem with 3.3V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B024	Overcurrent or overvoltage problem with 5.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B034	Overcurrent or overvoltage problem with 2.5V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B044	Overcurrent or overvoltage problem with 12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B054	Overcurrent or overvoltage problem with -12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B814	Overcurrent or overvoltage problem with 3.3V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B824	Overcurrent or overvoltage problem with 5.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B834	Overcurrent or overvoltage problem with 2.5V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B844	Overcurrent or overvoltage problem with 12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 B854	Overcurrent or overvoltage problem with -12.0V in first I/O subsystem	Go to "MAP 1520: Power" on page 139.
1014 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1014 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1014 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1014 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1014 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1014 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the first I/O subsystem, location: U1.9.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1014 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the first I/O subsystem, location: U1.9.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1014 xx11	First I/O subsystem in primary rack, DCA-1	U1.9-V1
1014 xx13	Seeprom fault on DCA-1 in first I/O subsystem in primary rack	U1.9-V1
1014 xx15	First I/O subsystem in primary rack, DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.9-V1/Q1 and U1.35-P2-X3/Q1 2. U1.9-V1/Q2 and U1.35-P1-X3/Q1
1014 xx17	Problem with fan 1 and fan 3 in first I/O subsystem in primary rack	1. DCA-1 Location U1.9–V1 2. Fan 1, Location U1.9–F1 3. Fan 3, Location U1.9–F3
1014 xx21	First I/O subsystem in primary rack, DCA-2	U1.9-V2
1014 xx23	Seeprom fault on DCA-2 in first I/O subsystem in primary rack	U1.9-V2
1014 xx25	First I/O subsystem in primary rack, DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.9-V2/Q1 and U1.35-P2-X3/Q2 2. U1.9-V2/Q2 and U1.35-P1-X3/Q2
1014 xx27	Problem with fan 2 and fan 4 in first I/O subsystem in primary rack	1. DCA-2 Location U1.9–V2 2. Fan 2, Location U1.9–F2 3. Fan 4, Location U1.9–F4
1014 xx31	First I/O subsystem in primary rack, I/O subsystem backplane 1 fault	U1.9-P1

Error Code	Description	Action/ Possible Failing FRU
1014 xx33	Seeprom fault on I/O subsystem backplane 1 in first I/O subsystem in primary rack	U1.9-P1
1014 xx41	First I/O subsystem in primary rack, I/O subsystem backplane 2 fault	U1.9-P2
1014 xx43	Seeprom fault on I/O subsystem backplane 2 in first I/O subsystem in primary rack	U1.9-P2
1014 xx51	First I/O subsystem in primary rack, DASD backplane 1 fault	U1.9-P3
1014 xx53	Seeprom fault on DASD backplane 1 in first I/O subsystem in primary rack	U1.9-P3
1014 xx61	First I/O subsystem in primary rack, DASD backplane 2 fault	U1.9-P4
1014 xx63	Seeprom fault on DASD backplane 2 in first I/O subsystem in primary rack	U1.9-P4
1014 xx71	First I/O subsystem in primary rack, DASD backplane 3 fault	U1.9-P5
1014 xx73	Seeprom fault on DASD backplane 3 in first I/O subsystem in primary rack	U1.9-P5
1014 xx81	First I/O subsystem in primary rack, DASD backplane 4 fault	U1.9-P6
1014 xx83	Seeprom fault on DASD backplane 4 in first I/O subsystem in primary rack	U1.9-P6
1015 1B17	Problem with fan 1 in second I/O subsystem in primary rack.	1. DCA-1 Location: U1.5-V1 2. Fan 1 Location:U1.5-F1
1015 1B27	Problem with fan 2 in second I/O subsystem in primary rack.	1. DCA-1 Location: U1.5-V2 2. Fan 1 Location:U1.5-F2
1015 1C06	Loss of airflow in second I/O subsystem, location: U1.5	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1015 6014	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6024	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6034	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6044	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6054	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6814	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6824	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1015 6834	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6844	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 6854	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 7017	Problem with fan 3 in second I/O subsystem in primary rack	1. DCA-1 Location: U1.5-V1 2. Fan 3 Location: U1.5-F3
1015 7027	Problem with fan 4 in second I/O subsystem in primary rack	1. DCA-2 Location: U1.5-V2 2. Fan 4 Location: U1.5-F4
1015 7117	Problem with fan 1 and fan 3 in second I/O subsystem in primary rack	1. DCA-1 Location: U1.5-V1 2. Fans 1 and 3 Location: U1.5-F1 and U1.5-F3
1015 7127	Problem with fan 2 and fan 4 in second I/O subsystem in primary rack	1. DCA-2 Location: U1.5-V2 2. Fans 2 and 4 Location: U1.5-F2 and U1.5-F4
1015 B014	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B024	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B034	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B044	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B054	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B814	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B824	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B834	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B844	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 B854	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem	Go to "MAP 1520: Power" on page 139.
1015 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1015 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1015 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1015 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1015 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1015 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the second I/O subsystem, location: U1.5.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1015 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the second I/O subsystem, location: U1.5.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1015 xx11	Second I/O subsystem in primary rack, DCA-1	U1.5-V1
1015 xx13	Seeprom fault on DCA-1 in second I/O subsystem in primary rack	U1.5-V1
1015 xx15	Second I/O subsystem in primary rack, DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.5-V1/Q1 and U1.35-P2-X3/Q3 2. U1.5-V1/Q2 and U1.35-P1-X3/Q3
1015 xx17	Problem with fan 1 and fan 3 in second I/O subsystem in primary rack	1. DCA-1 Location U1.5–V1 2. Fan 1, Location U1.5–F1 3. Fan 3, Location U1.5–F3
1015 xx21	Second I/O subsystem in primary rack, DCA-2	U1.5-V2
1015 xx23	Seeprom fault on DCA-2 in second I/O subsystem in primary rack	U1.5-V2
1015 xx25	Second I/O subsystem in primary rack, DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.5-V2/Q1 and U1.35-P2-X3/Q4 2. U1.5-V2/Q2 and U1.35-P1-X3/Q4
1015 xx27	Problem with fan 2 and fan 4 in second I/O subsystem in primary rack	1. DCA-2 Location U1.5–V2 2. Fan 2, Location U1.5–F2 3. Fan 4, Location U1.5–F4

Error Code	Description	Action/Possible Failing FRU
1015 xx31	Second I/O subsystem in primary rack, I/O subsystem backplane 1 fault	U1.5-P1
1015 xx33	Seeprom fault on I/O subsystem backplane 1 in second I/O subsystem in primary rack	U1.5-P1
1015 xx41	Second I/O subsystem in primary rack, I/O subsystem backplane 2 fault	U1.5-P2
1015 xx43	Seeprom fault on I/O subsystem backplane 2 in second I/O subsystem in primary rack	U1.5-P2
1015 xx51	Second I/O subsystem in primary rack, DASD backplane 1 fault	U1.5-P3
1015 xx53	Seeprom fault on DASD backplane 1 in second I/O subsystem in primary rack	U1.5-P3
1015 xx61	Second I/O subsystem in primary rack, DASD backplane 2 fault	U1.5-P4
1015 xx63	Seeprom fault on DASD backplane 2 in second I/O subsystem in primary rack	U1.5-P4
1015 xx71	Second I/O subsystem in primary rack, DASD backplane 3 fault	U1.5-P5
1015 xx73	Seeprom fault on DASD backplane 3 in second I/O subsystem in primary rack	U1.5-P5
1015 xx81	Second I/O subsystem in primary rack, DASD backplane 4 fault	U1.5-P6
1015 xx83	Seeprom fault on DASD backplane 4 in second I/O subsystem in primary rack	U1.5-P6
1016 1B17	Problem with fan 1 in third I/O subsystem in primary rack	1. DCA-1 Location: U1.1-V1 2. Fan 1 Location:U1.1-F1
1016 1B27	Problem with fan 2 in third I/O subsystem in primary rack	1. DCA-2 Location: U1.1-V2 2. Fan 2 Location:U1.1-F2
1016 1C06	Loss of airflow in third I/O subsystem, location: U1.1	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1016 6014	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6024	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6034	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6044	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6054	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6814	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1016 6824	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6834	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6844	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 6854	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 7017	Problem with fan 3 in third I/O subsystem in primary rack	1. DCA-1 Location: U1.1-V1 2. Fan 3 Location: U1.1-F3
1016 7027	Problem with fan 4 in third I/O subsystem in primary rack	1. DCA-2 Location: U1.1-V2 2. Fan 4 Location: U1.1-F4
1016 7117	Problem with fan 1 and fan 3 in third I/O subsystem in primary rack	1. DCA-1 Location: U1.1-V1 2. Fans 1 and 3 Location: U1.1-F1 and U1.1-F3
1016 7127	Problem with fan 2 and fan 4 in third I/O subsystem in primary rack	1. DCA-2 Location: U1.1-V2 2. Fans 2 and 4 Location: U1.1-F2 and U1.1-F4
1016 B014	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B024	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B034	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B044	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B054	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B814	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B824	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B834	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B844	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 B854	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem	Go to "MAP 1520: Power" on page 139.
1016 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1016 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1016 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1016 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1016 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1016 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the third I/O subsystem, location: U1.1.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1016 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the third I/O subsystem, location: U1.1.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1016 xx11	third I/O subsystem in primary rack, DCA-1	U1.1-V1
1016 xx13	Seeprom fault on DCA-1 in third I/O subsystem in primary rack	U1.1-V1
1016 xx15	Third I/O subsystem in primary rack, DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.1-V1/Q1 and U1.35-P2-X3/Q5 2. U1.1-V1/Q2 and U1.35-P1-X3/Q5
1016 xx17	Problem with fan 1 and fan 3 in third I/O subsystem in primary rack	1. DCA-1 Location U1.1–V1 2. Fan 1, Location U1.1–F1 3. Fan 3, Location U1.1–F3
1016 xx21	Third I/O subsystem in primary rack, DCA-2	U1.1-V2
1016 xx23	Seeprom fault on DCA-2 in third I/O subsystem in primary rack	U1.1-V2
1016 xx25	Third I/O subsystem in primary rack, DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.1-V2/Q1 and U1.35-P2-X3/Q6 2. U1.1-V2/Q2 and U1.35-P1-X3/Q6

Error Code	Description	Action/ Possible Failing FRU
1016 xx27	Problem with fan 2 and fan 4 in third I/O subsystem in primary rack	1. DCA-2 Location U1.1–V2 2. Fan 2, Location U1.1F2 3. Fan 4, Location U1.1–F4
1016 xx31	Third I/O subsystem in primary rack, I/O subsystem backplane 1 fault	U1.1-P1
1016 xx33	Seeprom fault on I/O subsystem backplane 1 in third I/O subsystem in primary rack	U1.1-P1
1016 xx41	Third I/O subsystem in primary rack, I/O subsystem backplane 2 fault	U1.1-P2
1016 xx43	Seeprom fault on I/O subsystem backplane 2 in third I/O subsystem in primary rack	U1.1-P2
1016 xx51	Third I/O subsystem in primary rack, DASD backplane 1 fault	U1.1-P3
1016 xx53	Seeprom fault on DASD backplane 1 in third I/O subsystem in primary rack	U1.1-P3
1016 xx61	Third I/O subsystem in primary rack, DASD backplane 2 fault	U1.1-P4
1016 xx63	Seeprom fault on DASD backplane 2 in third I/O subsystem in primary rack	U1.1-P4
1016 xx71	Third I/O subsystem in primary rack, DASD backplane 3 fault	U1.1-P5
1016 xx73	Seeprom fault on DASD backplane 3 in third I/O subsystem in primary rack	U1.1-P5
1016 xx81	Third I/O subsystem in primary rack, DASD backplane 4 fault	U1.1-P6
1016 xx83	Seeprom fault on DASD backplane 4 in third I/O subsystem in primary rack	U1.1-P6
1017 1B17	Problem with fan 1 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-1 Location: U1.13-V1 2. Fan 1 Location:U1.13-F1
1017 1B27	Problem with fan 2 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-2 Location: U1.13-V2 2. Fan 2 Location:U1.13-F2
1017 1C06	Loss of airflow in fourth I/O subsystem, no IBF location: U1.13	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1017 6014	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6024	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6034	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1017 6044	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6054	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6814	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6824	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6834	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6844	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 6854	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 7017	Problem with fan 3 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-1 Location: U1.13-V1 2. Fan 3 Location: U1.13-F3
1017 7027	Problem with fan 4 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-2 Location: U1.13-V2 2. Fan 4 Location: U1.13-F4
1017 7117	Problem with fan 1 and fan 3 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-1 Location: U1.13-V1 2. Fans 1 and 3 Location: U1.13-F1 and U1.13-F3
1017 7127	Problem with fan 2 and fan 4 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-2 Location: U1.13-V2 2. Fans 2 and 4 Location: U1.13-F2 and U1.13-F4
1017 B014	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B024	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B034	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B044	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B054	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B814	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B824	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B834	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1017 B844	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 B854	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem, no IBF	Go to "MAP 1520: Power" on page 139.
1017 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1017 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1017 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1017 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1017 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1017 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the fourth I/O subsystem, location: U1.13.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1017 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the fourth I/O subsystem, location: U1.13.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1017 xx11	Fourth I/O subsystem in primary rack (no IBF), DCA-1	U1.13-V1
1017 xx13	Seeprom fault on DCA-1 in fourth I/O subsystem (no IBF) in primary rack	U1.13-V1
1017 xx15	Fourth I/O subsystem in primary rack (no IBF), DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.13-V1/Q1 and U1.35-P2-X3/Q7 2. U1.13-V1/Q2 and U1.35-P1-X3/Q7
1017 xx17	Problem with fan 1 and fan 3 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-1 Location U1.13-V1 2. Fan 1, Location U1.13-F1 3. Fan 3, Location U1.13-F3
1017 xx21	Fourth I/O subsystem in primary rack (no IBF), DCA-2	U1.13-V2
1017 xx23	Seeprom fault on DCA-2 in fourth I/O subsystem (no IBF) in primary rack	U1.13-V2

Error Code	Description	Action/ Possible Failing FRU
1017 xx25	Fourth I/O subsystem in primary rack (no IBF), DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.13-V2/Q1 and U1.35-P2-X3/Q8 2. U1.13-V2/Q2 and U1.35-P1-X3/Q8

1017 xx27	Problem with fan 2 and fan 4 in fourth I/O subsystem (no IBF installed) in primary rack	1. DCA-2,
		   Location U1.13-V2
		2. Fan 2,
		   Location U1.13-F2
		3. Fan 4,
		   Location U1.13-F4

1017 xx31	Fourth I/O subsystem in primary rack, I/O subsystem backplane 1 fault	U1.13-P1
1017 xx33	Seeprom fault on I/O subsystem backplane 1 in fourth I/O subsystem (no IBF) in primary rack	U1.13-P1
1017 xx41	Fourth I/O subsystem in primary rack, I/O subsystem backplane 2 fault	U1.13-P2
1017 xx43	Seeprom fault on I/O subsystem backplane 2 in fourth I/O subsystem (no IBF) in primary rack	U1.13-P2
1017 xx51	Fourth I/O subsystem in primary rack, DASD backplane 1 fault	U1.13-P3
1017 xx53	Seeprom fault on DASD backplane 1 in fourth I/O subsystem (no IBF) in primary rack	U1.13-P3
1017 xx61	Fourth I/O subsystem in primary rack, DASD backplane 2 fault	U1.13-P4
1017 xx63	Seeprom fault on DASD backplane 2 in fourth I/O subsystem (no IBF) in primary rack	U1.13-P4
1017 xx71	Fourth I/O subsystem in primary rack, DASD backplane 3 fault	U1.13-P5
1017 xx73	Seeprom fault on DASD backplane 3 in fourth I/O subsystem (no IBF) in primary rack	U1.13-P5
1017 xx81	Fourth I/O subsystem in primary rack, DASD backplane 4 fault	U1.13-P6
1017 xx83	Seeprom fault on DASD backplane 4 in fourth I/O subsystem (no IBF) in primary rack	U1.13-P6
101A 0856	BPR 1A communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A 0866	BPR 2A communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A 0876	BPR 3A communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A 0D06	350 volt bulk failure, BPA-A	Go to "MAP 1525: There Is a 350 Volt Bulk Failure" on page 149.

Error Code	Description	Action/ Possible Failing FRU
101A 1C06	Cage airflow missing (temperature problem)	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
101A 3F06	Invalid I/O subsystem configurations	1. Verify that the I/O subsystems are properly cabled. **Note:** If the service processor is hung, this error code causes the service processor to hang. Refer to "Resetting the Service Processor" on page 724. 2. Call service support.
101A 7A86	IBF 1A failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A 7A96	IBF 2A failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A 7AA6	IBF 3A failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A 7B86	IBF 1A failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A 7B96	IBF 2A failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A 7BA6	IBF 3A failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101A CE16	BPC-BPC communication failure	1. Check the cable between the two BPCs; reseat and look for bent pins. 2. Replace BPC-A, location: U1.35-P1-X4 3. Replace BPC-B, location: U1.35-P2-X4.
101A D216	BPA-BPA communication failure	Go to "MAP 1520: Power" on page 139 for isolation.
101A D616	Problem with external UPS: utility failure	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A D716	Problem with external UPS: battery low	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A D756	Informational message about the IBF.	Informational message.
101A D766	Informational message about the IBF.	Informational message.
101A D776	Informational message about the IBF.	Informational message.
101A D816	External UPS: bypass active (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
101A D916	External UPS: power restored (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A DA16	External UPS: installed (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A DB16	Problem with external UPS: UPS not available	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A DC16	External UPS: battery not low (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A DC56	Informational message about the IBF.	Informational message.
101A DC66	Informational message about the IBF.	Informational message.
101A DC76	Informational message about the IBF.	Informational message.
101A DD16	External UPS: bypass ended (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A DF16	Problem with external UPS: UPS failure	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101A E106	Critical logic over temperature	Go to "MAP 1528: There Is A Processor (Critical/Warning) Overtemperature Fault" on page 157.

Error Code	Description	Action/ Possible Failing FRU
101A E206	Ambient room temperature too high	1. The ambient room temperature has reached a warning level (30 C) or a critical level (36 C). Ask the customer to correct the room temperature problem. 2. Call service support.
101A F4x6	Hardware configuration does not support N-mode power	Call service support.
101A F806	BPC A: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101A F906	BPC A: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101A F806	BPC A: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101A F906	BPC A: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101A FA06	Problem with EPO switch detected by BPC-A	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101A FDB6	BPC A: open room EPO switch has been detected	Go to "MAP 1524: An Open Room EPO Switch Has Been Detected From One Side" on page 147.
101A FE06	UEPO switch on BPC A is in the bypass position	Go to "MAP 1522: UEPO Switch On The BPC Is In The Bypass Position" on page 146.
101A FE16	UEPO switch on BPC A is in the bypass position	Go to "MAP 1522: UEPO Switch On The BPC Is In The Bypass Position" on page 146.
101A FE56	BPR 1A communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A FE66	BPR 2A communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A FE76	BPR 3A communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101A x115	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q1# to U1.18-X1/Q1#
101A x125	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q1# to U1.9-V1/Q2#
101A x135	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q1# to U2.1-V1/Q1#
101A x215	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q2# to U1.18-X2/Q1#
101A x225	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q2# to U1.9-V2/Q2#

Error Code	Description	Action/ Possible Failing FRU
101A x235	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q2# to U2.1-V2/Q1#
101A x315	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q3# to U1.18-X3/Q1#
101A x325	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q3# to U1.5-V1/Q2#
101A x335	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q3# to U2.5-V1/Q1#
101A x415	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q4# to U1.18-X4/Q1#
101A x425	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q4# to U1.5-V2/Q2#
101A x435	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q4# to U2.5-V2/Q1#
101A x515	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q5# to U1.18-P1-V1/Q1#
101A x525	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q5# to U1.1-V1/Q2#
101A x535	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q5# to U2.9-V1/Q1#
101A x615	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q6# to U1.18-P1-V2/Q1#
101A x625	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q6# to U1.1-V2/Q2#
101A x635	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q6# to U2.9-V2/Q1#
101A x715	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X4/Q7# to U1.18-P1-V4/Q1#
101A x725	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q7# to U1.13-V1/Q2#
101A x735	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q7# to U2.13-V1/Q1#
101A x825	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q8# to U1.13-V2/Q2#

Error Code	Description	Action/ Possible Failing FRU
101A x835	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q8# to U2.13-V2/Q1#
101A x925	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q9# to U1.18-P1-V5/Q1#
101A x935	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q9# to U2.19-V1/Q1#
101A xA25	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X3/Q10# to U1.18-P1-V6/Q1#
101A xA35	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P1-X2/Q10# to U2.19-V2/Q1#
101A xx0x	BPA A-FRU not isolated	U1.35
101A xx11	BPA-A / BPC	U1.35-P1-X4
101A xx13	Seeprom (VPD) fault on BPC-A	U1.35-P1-X4
101A xx17	Fan fault on BPC-A (BPA-A fan)	1. BPE-A side fan Location: U1.35-P1-F1 2. BPC-A Location: U1.35-P1-X4
101A xx21	BPA-A / BPD-1	U1.35-P1-X3
101A xx22	BPC-A to BPD-1 communications fault	1. BPD-1 Location: U1.35-P1-X3 2. BPC-A Location: U1.35-P1-X4 3. BPE backplane A Location: U1.35-P1
101A xx23	Seeprom (VPD) fault on BPD-1A	U1.35-P1-X3
101A xx31	BPA-A / BPD-2	U1.35-P1-X2
101A xx32	BPC-A to BPD-2 communications fault	1. BPD-2 Location: U1.35-P1-X2 2. BPC-A Location: U1.35-P1-X4 3. BPE backplane A Location: U1.35-P1
101A xx33	Seeprom (VPD) fault on BPD-2A	U1.35-P1-X2
101A xx41	BPA-A / BPD-3	U1.35-P1-X1
101A xx42	BPC-A to BPD-3 communications fault	1. BPD-3 Location: U1.35-P1-X1 2. BPC-A Location: U1.35-P1-X4 3. BPE backplane A Location: U1.35-P1
101A xx43	Seeprom (VPD) fault on BPD-3A	U1.35-P1-X1
101A xx51	BPA-A / BPR-1	U1.35-P1-V1

Error Code	Description	Action/ Possible Failing FRU
101A xx52	BPC-A to BPR-1 communications fault	1. BPR-1 Location: U1.35-P1-V1 2. BPC-A Location: U1.35-P1-X4 3. BPE backplane A Location: U1.35-P1
101A xx53	Seeprom (VPD) fault on BPR-1A	U1.35-P1-V1
101A xx61	BPA-A / BPR-2	U1.35-P1-V2
101A xx62	BPC-A to BPR-2 communications fault	1. BPR-2 Location: U1.35-P1-V2 2. BPC-A Location: U1.35-P1-X4 3. BPE backplane A Location: U1.35-P1
101A xx63	Seeprom (VPD) fault on BPR-2A	U1.35-P1-V2
101A xx71	BPA-A / BPR-3	U1.35-P1-V3
101A xx72	BPC-A to BPR-3 communications fault	1. BPR-3 Location: U1.35-P1-V3 2. BPC-A Location: U1.35-P1-X4 3. BPE backplane A Location: U1.35-P1
101A xx73	Seeprom (VPD) fault on BPR-3A	U1.35-P1-V3
101A xx81	BPA-A / IBF 1	U1.13-P1-V1
101A xx83	Seeprom (VPD) fault on IBF-1A	U1.13-P1-V1
101A xx91	BPA-A / IBF 2	U1.15-P1-V2
101A xx93	Seeprom (VPD) fault on IBF-2A	U1.15-P1-V2
101A xxA1	BPA-A / IBF 3	U2.17-P1-V5
101A xxA3	Seeprom (VPD) fault on IBF-3A	U2.17-P1-V5
101A xxB1	BPA-A / EPO_SW	1. Replace the UEPO switch, Location: U1-V1 2. Check the cable from BPC-A to the UEPO switch, Location U1-V1/Q1#
101B 0856	BPR 1B communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101B 0866	BPR 2B communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101B 0876	BPR 3B communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101B 0D06	350 volt bulk failure, BPA-B	Go to "MAP 1525: There Is a 350 Volt Bulk Failure" on page 149.

Error Code	Description	Action/ Possible Failing FRU
101B 1C06	Cage airflow missing (temperature problem)	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
101B 3F06	Invalid I/O subsystem configuration	1. Verify that the I/O subsystems are properly cabled. **Note:** If the service processor is hung, this error code causes the service processor to hang. Refer to "Resetting the Service Processor" on page 724. 2. Call service support.
101B 7A86	IBF 1B failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101B 7A96	IBF 2B failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101B 7AA6	IBF 3B failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101B 7B86	IBF 1B failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101B 7B96	IBF 2B failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101B 7BA6	IBF 3B failure	Go to "MAP 1526: There Is An Integrated Battery Feature (IBF) Failure" on page 152.
101B CE16	BPC-BPC communication failure	1. Check the cable between the two BPCs; reseat and look for bent pins. 2. Replace BPC-A, location: U1.35-P1-X4 3. Replace BPC-B, location: U1.35-P2-X4.
101B D216	BPA-BPA communication failure	Go to "MAP 1520: Power" on page 139 for isolation.
101B D616	Problem with external UPS: utility failure	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B D716	Problem with external UPS: battery low	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B D716	Informational message about the IBF.	Informational message.
101B D766	Informational message about the IBF.	Informational message.
101B D776	Informational message about the IBF.	Informational message.
101B D816	External UPS: bypass active (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
101B D916	External UPS: power restored (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B DA16	External UPS: installed (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B DB16	Problem with external UPS: UPS not available	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B DC16	External UPS: battery not low (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B DC56	Informational message about the IBF.	Informational message.
101B DC66	Informational message about the IBF.	Informational message.
101B DC76	Informational message about the IBF.	Informational message.
101B DD16	External UPS: bypass ended (informational message)	Informational message. If a problem is suspected: 1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B DF16	Problem with external UPS: UPS failure	1. Verify the cabling between the UPS and the BPCs. 2. Refer to the manufacturer's documentation for the UPS. 3. Call service support.
101B E106	Critical logic over temperature	Go to "MAP 1528: There Is A Processor (Critical/Warning) Overtemperature Fault" on page 157.

Error Code	Description	Action/ Possible Failing FRU
101B E206	Ambient room temperature too high	1. The ambient room temperature has reached a warning level or a critical level. Ask the customer to correct the room temperature problem. 2. Call service support.
101B F4x6	Hardware configuration does not support N-mode power	Call service support.
101B F806	BPC B: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101B F906	BPC B: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101B FA06	BPC B: loss of ac power or phase missing	Go to "MAP 152a: Loss of ac Power or Phase Missing" on page 159.
101B FDB6	BPC B: open room EPO switch has been detected	Go to "MAP 1524: An Open Room EPO Switch Has Been Detected From One Side" on page 147.
101B FE06	UEPO switch on BPC B is in the bypass position	Go to "MAP 1522: UEPO Switch On The BPC Is In The Bypass Position" on page 146.
101B FE16	UEPO switch on BPC B is in the bypass position	Go to "MAP 1522: UEPO Switch On The BPC Is In The Bypass Position" on page 146.
101B FE56	BPR 1B communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101B FE66	BPR 2B communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101B FE76	BPR 3B communications fault	Go to "MAP 1523: There Is a Bulk Power Regulator (BPR) Communications Fault" on page 147.
101B x115	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q1# to U1.18-X1/Q2#
101B x125	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q1# to U1.9-V1/Q1#
101B x135	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q1# to U2.1-V1/Q2#
101B x215	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q2# to U1.18-X2/Q2#
101B x225	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q2# to U1.9-V2/Q1#
101B x235	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q2# to U2.1-V2/Q2#
101B x315	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q3# to U1.18-X3/Q2#

Error Code	Description	Action/ Possible Failing FRU
101B x325	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q3# to U1.5-V1/Q1#
101B x335	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q3# to U2.5-V1/Q2#
101B x415	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q4# to U1.18-X4/Q2#
101B x425	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q4# to U1.5-V2/Q1#
101B x435	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q4# to U2.5-V2/Q2#
101B x515	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q5# to U1.18-P1-V1/Q2#
101B x525	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q5# to U1.1-V1/Q1#
101B x535	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q5# to U2.9-V1/Q2#
101B x615	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q6# to U1.18-P1-V2/Q2#
101B x625	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q6# to U1.1-V2/Q1#
101B x635	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q6# to U2.9-V2/Q2#
101B x715	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X4/Q7# to U1.18-P1-V4/Q2#
101B x725	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q7# to U1.13-V1/Q1#
101B x735	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q7# to U2.13-V1/Q2#
101B x825	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q8# to U1.13-V2/Q1#
101B x835	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q8# to U2.13-V2/Q2#
101B x925	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q9# to U1.18-P1-V5/Q2#

Error Code	Description	Action/ Possible Failing FRU
101B x935	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q9# to U2.19-V1/Q2#
101B xA25	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X3/Q10# to U1.18-P1-V6/Q2#
101B xA35	Power cable fault	Go to "MAP 1520: Power" on page 139 with these location codes: U1.35-P2-X2/Q10# to U2.19-V2/Q2#
101B xx0x	BPA B-FRU not isolated	U1.35
101B xx11	BPA-B / BPC	U1.35-P2-X4
101B xx13	Seeprom (VPD) fault on BPC-B	U1.35-P2-X4

101B xx17	Fan fault on BPC-B (BPA-B fan)	1. BPE-B side fan
		   Location: U1.35-P2-F1
		2. BPC-B
		   Location: U1.35-P2-X4

101B xx21	BPA-B / BPD-1	U1.35-P2-X3

101B xx22	BPC-B to BPD-1 communications fault	1. BPD-1
		   Location: U1.35-P2-X3
		2. BPC-B
		   Location: U1.35-P2-X4
		3. BPE backplane B
		   Location: U1.35-P2

101B xx23	Seeprom (VPD) fault on BPD-1B	U1.35-P2-X3
101B xx31	BPA-B / BPD-2	U1.35-P2-X2

101B xx32	BPC-B to BPD-2 communications fault	1. BPD-2
		   Location: U1.35-P2-X2
		2. BPC-B
		   Location: U1.35-P2-X4
		3. BPE backplane B
		   Location: U1.35-P2

101B xx33	Seeprom (VPD) fault on BPD-2B	U1.35-P2-X2
101B xx41	BPA-B / BPD-3	U1.35-P2-X1

101B xx42	BPC-B to BPD-3 communications fault	1. BPD-3
		   Location: U1.35-P2-X1
		2. BPC-B
		   Location: U1.35-P2-X4
		3. BPE backplane B
		   Location: U1.35-P2

101B xx43	Seeprom (VPD) fault on BPD-3B	U1.35-P2-X1
101B xx51	BPA-B / BPR-1	U1.35-P2-V1

Error Code	Description	Action/ Possible Failing FRU

101B xx52	BPC-B to BPR-1 communications fault	1. BPR-1
		   Location: U1.35-P2-V1
		
		2. BPC-B
		   Location: U1.35-P2-X4
		
		3. BPE backplane B
		   Location: U1.35-P2

101B xx53	Seeprom (VPD) fault on BPR-1B	U1.35-P2-V1
101B xx61	BPA-B / BPR-2	U1.35-P2-V2

101B xx62	BPC-B to BPR-2 communications fault	1. BPR-2
		   Location: U1.35-P2-V2
		
		2. BPC-B
		   Location: U1.35-P2-X4
		
		3. BPE backplane B
		   Location: U1.35-P2

101B xx63	Seeprom (VPD) fault on BPR-2B	U1.35-P2-V2
101B xx71	BPA-B / BPR-3	U1.35-P2-V3

101B xx72	BPC-B to BPR-3 communications fault	1. BPR-3
		   Location: U1.35-P2-V3
		
		2. BPC-B
		   Location: U1.35-P2-X4
		
		3. BPE backplane B
		   Location: U1.35-P2

101B xx73	Seeprom (VPD) fault on BPR-3B	U1.35-P2-V3
101B xx81	BPA-B / IBF 1	U1.13-P2-V3
101B xx83	Seeprom (VPD) fault on IBF-1B	U1.13-P2-V3
101B xx91	BPA-B / IBF 2	U1.15-P2-V4
101B xx93	Seeprom (VPD) fault on IBF-2B	U1.15-P2-V4
101B xxA1	BPA-B / IBF 3	U2.17-P2-V6
101B xxA3	Seeprom (VPD) fault on IBF-3B	U2.17-P2-V6

101B xxB1	BPA-B / EPO_SW	1. Replace the UEPO switch,
		   Location: U1-V1
		
		2. Check the cable from BPC-B to the UEPO switch,
		   Location U1-V1/Q2#

101C 0FB6	MCM 0 running over temperature	1. Verify that the MCM at U1.18-P1-C1 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C1 or its heatsink. 3. Verify that the MCM at U1.18-P1-C1 is installed correctly onto the processor backplane. 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
101C 0FC6	MCM 1 running over temperature	1. Verify that the MCM at U1.18-P1-C3 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C3 or its heatsink. 3. Verify that the MCM at U1.18-P1-C3 is installed correctly onto the processor backplane. 4. Call service support.
101C 0FD6	MCM 2 running over temperature	1. Verify that the MCM at U1.18-P1-C4 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C4 or its heatsink. 3. Verify that the MCM at U1.18-P1-C4 is installed correctly onto the processor backplane. 4. Call service support.
101C 0FE6	MCM 3 running over temperature	1. Verify that the MCM at U1.18-P1-C2 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C2 or its heatsink. 3. Verify that the MCM at U1.18-P1-C2 is installed correctly onto the processor backplane. 4. Call service support.
101C 1C06	Loss of airflow in processor subsystem resulting in over-temperature	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155 with location U1.18.
101C 6014	Overcurrent or overvoltage problem with 2.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6114	Overcurrent or overvoltage problem with 1.8V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6124	Overcurrent or overvoltage problem with1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6134	Overcurrent or overvoltage problem with 1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6144	Overcurrent or overvoltage problem with 3.3V in processor subsystem (oscillator)	Go to "MAP 1520: Power" on page 139.
101C 6514	Overcurrent or overvoltage problem with 5.0V in processor subsystem (autostart, standby)	Go to "MAP 1520: Power" on page 139.
101C 6814	Overcurrent or overvoltage problem with 2.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6914	Overcurrent or overvoltage problem with 1.8V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6924	Overcurrent or overvoltage problem with1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C 6934	Overcurrent or overvoltage problem with 1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
101C 6944	Overcurrent or overvoltage problem with 3.3V in processor subsystem (oscillator)	Go to "MAP 1520: Power" on page 139.
101C 6D14	Overcurrent or overvoltage problem with 5.0V in processor subsystem (autostart, standby)	Go to "MAP 1520: Power" on page 139.
101C 7E06	No MCMs detected OR the actual number of MCMs does not match the expected number of MCMs	1. Verify that the processor MCMs are plugged in a valid configuration. 2. Verify that the processor MCMs are seated properly. 3. Verify the processor VPD cards in the primary I/O book are of the proper number and are positioned and seated correctly. 4. Call service support.
101C 7EB6	MCM 0 running over temperature	1. Verify that the MCM at U1.18-P1-C1 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C1 or its heatsink. 3. Verify that the MCM at U1.18-P1-C1 is installed correctly onto the processor backplane. 4. Call service support.
101C 7EC6	MCM 1 running over temperature	1. Verify that the MCM at U1.18-P1-C3 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C3 or its heatsink. 3. Verify that the MCM at U1.18-P1-C3 is installed correctly onto the processor backplane. 4. Call service support.
101C 7ED6	MCM 2 running over temperature	1. Verify that the MCM at U1.18-P1-C4 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C4 or its heatsink. 3. Verify that the MCM at U1.18-P1-C4 is installed correctly onto the processor backplane. 4. Call service support.
101C 7EE6	MCM 3 running over temperature	1. Verify that the MCM at U1.18-P1-C2 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C2 or its heatsink. 3. Verify that the MCM at U1.18-P1-C2 is installed correctly onto the processor backplane. 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
101C 7F06	No MCMs detected OR the actual number of MCMs does not match the expected number of MCMs	**Note:** If the service processor is hung, this error code causes the service processor to hang. Refer to "Resetting the Service Processor" on page 724. 1. MCMs can only be plugged in locations U1.18-P1-C1 and U1.18-P1-C4. Verify that the MCM(s) are properly installed. 2. Verify that the processor MCMs are seated properly. 3. Verify the processor VPD cards in the primary I/O book are of the proper number and are positioned and seated correctly. 4. Call service support.
101C B014	Overcurrent or overvoltage problem with 2.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B114	Overcurrent or overvoltage problem with 1.8V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B124	Overcurrent or overvoltage problem with1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B134	Overcurrent or overvoltage problem with 1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B144	Overcurrent or overvoltage problem with 3.3V in processor subsystem (oscillator)	Go to "MAP 1520: Power" on page 139.
101C B544	Overcurrent or overvoltage problem with 5.0V in processor subsystem (autostart, standby)	Go to "MAP 1520: Power" on page 139.
101C B814	Overcurrent or overvoltage problem with 2.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B914	Overcurrent or overvoltage problem with 1.8V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B924	Overcurrent or overvoltage problem with1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B934	Overcurrent or overvoltage problem with 1.5V in processor subsystem	Go to "MAP 1520: Power" on page 139.
101C B944	Overcurrent or overvoltage problem with 3.3V in processor subsystem (oscillator)	Go to "MAP 1520: Power" on page 139.
101C BD44	Overcurrent or overvoltage problem with 5.0V in processor subsystem (autostart, standby)	Go to "MAP 1520: Power" on page 139.
101C E006	Processor over-temperature detected	Go to "MAP 1528: There Is A Processor (Critical/Warning) Overtemperature Fault" on page 157.
101C E106	Processor over-temperature detected	Go to "MAP 1528: There Is A Processor (Critical/Warning) Overtemperature Fault" on page 157.

Error Code	Description	Action/ Possible Failing FRU
101C E1B6	MCM 0 running over temperature	1. Verify that the MCM at U1.18-P1-C1 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C1 or its heatsink. 3. Verify that the MCM at U1.18-P1-C1 is installed correctly onto the processor backplane. 4. Call service support.
101C E1C6	MCM 1 running over temperature	1. Verify that the MCM at U1.18-P1-C3 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C3 or its heatsink. 3. Verify that the MCM at U1.18-P1-C3 is installed correctly onto the processor backplane. 4. Call service support.
101C E1D6	MCM 2 running over temperature	1. Verify that the MCM at U1.18-P1-C4 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C4 or its heatsink. 3. Verify that the MCM at U1.18-P1-C4 is installed correctly onto the processor backplane. 4. Call service support.
101C E1E6	MCM 3 running over temperature	1. Verify that the MCM at U1.18-P1-C2 is installed. 2. Verify that there are no airflow problems with the MCM at U1.18-P1-C2 or its heatsink. 3. Verify that the MCM at U1.18-P1-C2 is installed correctly onto the processor backplane. 4. Call service support.
101C F206	Error not isolated; VPD on BPR may be damaged	Call service support.
101C F306	The power subsystem does not recognize the processor subsystem type or processor subsystem configuration	Call service support.
101C F406	Hardware configuration cannot support N-mode power	Call service support.
101C F606	The power subsystem does not recognize the processor subsystem type or processor subsystem configuration	Call service support.

Error Code	Description	Action/ Possible Failing FRU
101C F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F536	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F546	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F556	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F566	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.

Error Code	Description	Action/ Possible Failing FRU
101C F576	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F586	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F596	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C F5A6	An N+1 boundary (DCA or fan) has dropped to N-mode status in the processor subsystem, location: U1.18	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
101C xx11	Processor subsystem / DCA-1	U1.18-P1-V1
101C xx13	Seeprom (VPD) fault on processor subsystem DCA-1	U1.18-P1-V1
101C xx15	Processor subsystem / DCA-1 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-P1-V1/Q1 and U1.35-P1-X4/Q5 2. U1.18-P1-V1/Q2 and U1.35-P2-X4/Q5
101C xx21	Processor subsystem / DCA-2	U1.18-P1-V2
101C xx23	Seeprom (VPD) fault on processor subsystem DCA-2	U1.18-P1-V2
101C xx25	Processor subsystem / DCA-2 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-P1-V2/Q1 and U1.35-P1-X4/Q6 2. U1.18-P1-V2/Q2 and U1.35-P2-X4/Q6
101C xx31	Processor subsystem / DCA-3	U1.18-P1-V4

Error Code	Description	Action/ Possible Failing FRU
101C xx33	Seeprom (VPD) fault on processor subsystem DCA -3	U1.18-P1-V4
101C xx35	Processor subsystem / DCA-3 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-P1-V4/Q1 and U1.35-P1-X4/Q7 2. U1.18-P1-V4/Q2 and U1.35-P2-X4/Q7
101C xx41	Processor subsystem / DCA-4	U1.18-P1-V5
101C xx43	Seeprom (VPD) fault on processor subsystem DCA-4	U1.18-P1-V5
101C xx45	Processor subsystem / DCA-4 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-P1-V5/Q1 and U1.35-P1-X3/Q9 2. U1.18-P1-V5/Q2 and U1.35-P2-X3/Q9
101C xx51	Processor subsystem / DCA-5	U1.18-P1-V6
101C xx53	Seeprom (VPD) fault on processor subsystem DCA-5	U1.18-P1-V6
101C xx55	Processor subsystem / DCA-5 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-P1-V6/Q1 and U1.35-P1-X3/Q10 2. U1.18-P1-V6/Q2 and U1.35-P2-X3/Q10
101C xx61	Processor subsystem / DCA-6 (if installed)	U1.18-P1-V8
101C xx63	Seeprom (VPD) fault on processor subsystem DCA-6	U1.18-P1-V8
101C xx71	Processor subsystem / MDA-1	U1.18-X1
101C xx73	Seeprom (VPD) fault on processor subsystem MDA -1	U1.18-X1
101C xx75	Processor subsystem / MDA-1 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-X1/Q1 and U1.35-P1-X4/Q1 2. U1.18-X1/Q2 and U1.35-P2-X4/Q1
101C xx77	Fan fault on processor subsystem fan 1	1. Fan 1 controller Location: U1.18-X1 2. Fan 1 Location: U1.18-F1
101C xx81	Processor subsystem / MDA-2	U1.18-X2
101C xx83	Seeprom (VPD) fault on processor subsystem MDA-2	U1.18-X2
101C xx85	Processor subsystem / MDA-2 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-X2/Q1 and U1.35-P1-X4/Q2 2. U1.18-X2/Q2 and U1.35-P2-X4/Q2
101C xx87	Fan fault on processor subsystem fan 2	1. Fan 2 controller Location: U1.18-X2 2. Fan 2 Location: U1.18-F2
101C xx91	Processor subsystem / MDA-3	U1.18-X3

Error Code	Description	Action/ Possible Failing FRU
101C xx93	Seeprom (VPD) fault on processor subsystem MDA-3	U1.18-X3
101C xx95	Processor subsystem / MDA-3 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-X3/Q1 and U1.35-P1-X4/Q3 2. U1.18-X3/Q2 and U1.35-P2-X4/Q3
101C xx97	Fan fault on processor subsystem fan 3	1. Fan 3 controller Location: U1.18-X3 2. Fan 3 Location: U1.18-F3
101C xxA1	Processor subsystem / MDA-4	U1.18-X4
101C xxA3	Seeprom (VPD) fault on processor subsystem MDA-4	U1.18-X4
101C xxA5	Processor subsystem / MDA-4 cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U1.18-X4/Q1 and U1.35-P1-X4/Q4 2. U1.18-X4/Q2 and U1.35-P2-X4/Q4
101C xxA7	Fan fault on processor subsystem fan 4	1. Fan 4 controller Location: U1.18-X4 2. Fan 4 Location: U1.18-F4
10211B17	Problem with fan 1 in first I/O subsystem in second rack (I/O subsystem 5)	1. DCA-1 Location: U2.1-V1 2. Fan 1 Location:U2.1-F1
1021 1B27	Problem with fan 2 in first I/O subsystem in second rack (I/O subsystem 5)	1. DCA-2 Location: U2.1-V2 2. Fan 2 Location:U2.1-F2
1021 1C06	Loss of airflow in first I/O subsystem in second rack, location: U2.1	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1021 6014	Overcurrent or overvoltage problem with 3.3V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6024	Overcurrent or overvoltage problem with 5.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6034	Overcurrent or overvoltage problem with 2.5V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6044	Overcurrent or overvoltage problem with 12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6054	Overcurrent or overvoltage problem with -12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6814	Overcurrent or overvoltage problem with 3.3V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6824	Overcurrent or overvoltage problem with 5.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
10216834	Overcurrent or overvoltage problem with 2.5V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6844	Overcurrent or overvoltage problem with 12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 6854	Overcurrent or overvoltage problem with -12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.

1021 7017	Problem with fan 3 in first I/O subsystem in second rack (I/O subsystem 5)	1. DCA-1
		   Location: U2.1-V1
		2. Fan 3
		   Location: U2.1-F3

1021 7027	Problem with fan 4 in first I/O subsystem in second rack (I/O subsystem 5)	1. DCA-2
		   Location: U2.1-V2
		2. Fan 4
		   Location: U2.1-F4

1021 7117	Problem with fan 1 and fan 3 in first I/O subsystem in second rack (I/O subsystem 5)	1. DCA-1
		   Location: U2.1-V1
		2. Fans 1 and 3
		   Location: U2.1-F1 and U2.1-F3

1021 7127	Problem with fan 2 and fan 4 in first I/O subsystem in second rack (I/O subsystem 5)	1. DCA-2
		   Location: U2.1-V2
		2. Fans 2 and 4
		   Location: U2.1-F2 and U2.1-F4

1021 B014	Overcurrent or overvoltage problem with 3.3V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B024	Overcurrent or overvoltage problem with 5.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B034	Overcurrent or overvoltage problem with 2.5V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B044	Overcurrent or overvoltage problem with 12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B054	Overcurrent or overvoltage problem with -12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B814	Overcurrent or overvoltage problem with 3.3V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B824	Overcurrent or overvoltage problem with 5.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B834	Overcurrent or overvoltage problem with 2.5V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B844	Overcurrent or overvoltage problem with 12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 B854	Overcurrent or overvoltage problem with -12.0V in 5th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1021 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1021 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1021 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1021 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1021 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1021 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the first I/O subsystem in the secondary rack, location: U2.1.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1021 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the first I/O subsystem in the secondary rack, location: U2.1.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1021 xx11	First I/O subsystem in second rack, DCA-1	U2.1-V1
1021 xx13	Seeprom fault on DCA-1 in first I/O subsystem secondary rack	U2.1-V1
1021 xx15	First I/O subsystem in second rack, DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.1-V1/Q1 and U1.35-P2-X2/Q1 2. U2.1-V1/Q2 and U1.35-P1-X2/Q1
1021 xx17	Problem with fan 1 and fan 3 in first I/O subsystem in second rack	1. DCA-1 Location U2.1–V1 2. Fan 1, Location U2.1–F1 3. Fan 3, Location U2.1–F3
1021 xx21	First I/O subsystem in second rack, DCA-2	U2.1-V2
1021 xx23	Seeprom fault on DCA-2 in first I/O subsystem secondary rack	U2.1-V2
1021 xx25	First I/O subsystem in second rack, DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.1-V2/Q1 and U1.35-P2-X2/Q2 2. U2.1-V2/Q2 and U1.35-P1-X2/Q2
1021 xx27	Problem with fan 2 and fan 4 in first I/O subsystem in second rack	1. DCA-2 Location U2.1–V2 2. Fan 2, Location U2.1–F2 3. Fan 4, Location U2.1–F4

Error Code	Description	Action/ Possible Failing FRU
1021 xx31	First I/O subsystem in secondary rack I/O subsystem backplane 1 fault	U2.1-P1
1021 xx33	Seeprom fault on I/O subsystem backplane 1 in first I/O subsystem in secondary rack	U2.1-P1
1021 xx41	First I/O subsystem in secondary rack I/O subsystem backplane 2 fault	U2.1-P2
1021 xx43	Seeprom fault on I/O subsystem backplane 2 in first I/O subsystem in secondary rack	U2.1-P2
1021 xx51	First I/O subsystem in secondary rack DASD backplane 1 fault	U2.1-P3
1021 xx53	Seeprom fault on DASD backplane 1 in first I/O subsystem in secondary rack	U2.1-P3
1021 xx61	First I/O subsystem in secondary rack DASD backplane 2 fault	U2.1-P4
1021 xx63	Seeprom fault on DASD backplane 2 in first I/O subsystem in secondary rack	U2.1-P4
1021 xx71	First I/O subsystem in secondary rack DASD backplane 3 fault	U2.1-P5
1021 xx73	Seeprom fault on DASD backplane 3 in first I/O subsystem in secondary rack	U2.1-P5
1021 xx81	First I/O subsystem in secondary rack DASD backplane 4 fault	U2.1-P6
1021 xx83	Seeprom fault on DASD backplane 4 in first I/O subsystem in secondary rack	U2.1-P6
1022 1B17	Problem with fan 1 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-1 Location: U2.5-V1 2. Fan 1 Location:U2.5-F1
1022 1B27	Problem with fan 2 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-2 Location: U2.5-V2 2. Fan 2 Location:U2.5-F2
1022 1C06	Loss of airflow in second I/O subsystem in second rack (I/O subsystem 6), location: U2.5	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1022 6014	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6024	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6034	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6044	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1022 6054	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6814	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6824	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6834	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6844	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 6854	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.

1022 7017	Problem with fan 3 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-1
		   Location: U2.5-V1
		2. Fan 3
		   Location: U2.5-F3

1022 7027	Problem with fan 4 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-2
		   Location: U2.5-V2
		2. Fan 4
		   Location: U2.5-F4

1022 7117	Problem with fan 1 and fan 3 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-1
		   Location: U2.5-V1
		2. Fans 1 and 3
		   Location: U2.5-F1 and U2.5-F3

1022 7127	Problem with fan 2 and fan 4 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-2
		   Location: U2.5-V2
		2. Fans 2 and 4
		   Location: U2.5-F2 and U2.5-F4

1022 B014	Overcurrent or overvoltage problem with 3.3V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 B024	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 B034	Overcurrent or overvoltage problem with 2.5V in 6th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1022 B044	Overcurrent or overvoltage problem with 12.0V in6th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1022 B054	Overcurrent or overvoltage problem with -12.0V in 6th I/O subsystem	Go to "MAP 1520: Power" on page 139.
1022 B814	Overcurrent or overvoltage problem with 3.3V in 6th I/O subsystem	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1022 B824	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 B834	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 B844	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 B854	Overcurrent or overvoltage problem with -12.0V in second I/O subsystem in second rack (I/O subsystem 6)	Go to "MAP 1520: Power" on page 139.
1022 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1022 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1022 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1022 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1022 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1022 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in second I/O subsystem in second rack (I/O subsystem 6), location: U2.5.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1022 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the second I/O subsystem in the secondary rack, location: U2.5.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1022 xx11	Second I/O subsystem in second rack (I/O subsystem 6), DCA-1	U2.5-V1
1022 xx13	Seeprom fault on DCA-1 in second I/O subsystem in second rack (I/O subsystem 6)	U2.5-V1
1022 xx15	Second I/O subsystem in second rack (I/O subsystem 6), DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.5-V1/Q1 and U1.35-P2-X2/Q3 2. U2.5-V1/Q2 and U1.35-P1-X2/Q3

Error Code	Description	Action/ Possible Failing FRU
1022 xx17	Problem with fan 1 and fan 3 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-1 Location U2.5–V1 2. Fan 1, Location U2.5–F1 3. Fan 3, Location U2.5–F3
1022 xx21	Second I/O subsystem in second rack (I/O subsystem 6), DCA-2	U2.5-V2
1022 xx23	Seeprom fault on DCA-2 in second I/O subsystem in secondary rack (I/O subsystem 6)	U2.5-V2
1022 xx25	Second I/O subsystem in second rack (I/O subsystem 6), DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.5-V2/Q1 and U1.35-P2-X2/Q4 2. U2.5-V2/Q2 and U1.35-P1-X2/Q4
1022 xx27	Problem with fan 2 and fan 4 in second I/O subsystem in second rack (I/O subsystem 6)	1. DCA-2 Location U2.5–V2 2. Fan 2, Location U2.5–F2 3. Fan 4, Location U2.5–F4
1022 xx31	Second I/O subsystem in secondary rack (I/O subsystem 6) I/O subsystem backplane 1 fault	U2.5-P1
1022 xx33	Seeprom fault on I/O subsystem backplane 1 in second I/O subsystem in secondary rack (I/O subsystem 6) Broken 12C Bus	U2.5-P1
1022 xx41	Second I/O subsystem in secondary rack (I/O subsystem 6) I/O subsystem backplane 2 fault	U2.5-P2
1022 xx43	Seeprom fault on I/O subsystem backplane 2 in second I/O subsystem in secondary rack (I/O subsystem 6)	U2.5-P2
1022 xx51	Second I/O subsystem in secondary rack (I/O subsystem 6) DASD backplane 1 fault	U2.5-P3
1022 xx53	Seeprom fault on DASD backplane 1 in second I/O subsystem in secondary rack (I/O subsystem 6)	U2.5-P3
1022 xx61	Second I/O subsystem in secondary rack (I/O subsystem 6), DASD backplane 2 fault	U2.5-P4
1022 xx63	Seeprom fault on DASD backplane 2 in second I/O subsystem in secondary rack (I/O subsystem 6)	U2.5-P4
1022 xx71	Second I/O subsystem in secondary rack (I/O subsystem 6), DASD backplane 3 fault	U2.5-P5
1022 xx73	Seeprom fault on DASD backplane 3 in second I/O subsystem in secondary rack (I/O subsystem 6)	U2.5-P5
1022 xx81	Second I/O subsystem in secondary rack (I/O subsystem 6) DASD backplane 4 fault	U2.5-P6

Error Code	Description	Action/ Possible Failing FRU
1022 xx83	Seeprom fault on DASD backplane 4 in second I/O subsystem in secondary rack (I/O subsystem 6)	U2.5-P6
1023 1B17	Problem with fan 1 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-1 Location: U2.9-V1 2. Fan 1 Location:U2.9-F1
1023 1B27	Problem with fan 2 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-2 Location: U2.9-V2 2. Fan 2 Location:U2.9-F2
1023 1C06	Loss of airflow in fourth I/O subsystem, with IBF location: U2.9	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1023 6014	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6024	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6034	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6044	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6054	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6814	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6824	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6834	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6844	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 6854	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 7017	Problem with fan 3 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-1 Location: U2.9-V1 2. Fan 3 Location: U2.9-F3

Error Code	Description	Action/ Possible Failing FRU
1023 7027	Problem with fan 4 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-2 Location: U2.9-V2 2. Fan 4 Location: U2.9-F4
1023 7117	Problem with fan 1 and fan 3 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-1 Location: U2.9-V1 2. Fans 1 and 3 Location: U2.9-F1 and U2.9-F3
1023 7127	Problem with fan 2 and fan 4 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-2 Location: U2.9-V2 2. Fans 2 and 4 Location: U2.9-F2 and U2.9-F4
1023 B014	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B024	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B034	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B044	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B054	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B814	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B824	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B834	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B844	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 B854	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem (with IBF, moves to second rack)	Go to "MAP 1520: Power" on page 139.
1023 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1023 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1023 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1023 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1023 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1023 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in the fourth subsystem (with IBF, location: U2.9.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1023 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in the fourth I/O subsystem (with IBF), location: U2.9.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1023 xx11	Fourth I/O subsystem moves to second rack (with IBF), DCA-1	U2.9-V1
1023 xx13	Seeprom fault on DCA-1 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-V1
1023 xx15	Fourth I/O subsystem moves to second rack (with IBF), DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.9-V1/Q1 and U1.35-P2-X2/Q5 2. U2.9-V1/Q2 and U1.35-P1-X2/Q5
1023 xx17	Problem with fan 1 and fan 3 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-1 Location U2.9–V1 2. Fan 1, Location U2.9–F1 3. Fan 3, Location U2.9–F3
1023 xx21	Fourth I/O subsystem moves to second rack (with IBF), DCA-2	U2.9-V2
1023 xx23	Seeprom fault on DCA-2 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-V2
1023 xx25	Fourth I/O subsystem moves to second rack (with IBF), DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.9-V2/Q1 and U1.35-P2-X2/Q6 2. U2.9-V2/Q2 and U1.35-P1-X2/Q6
1023 xx27	Problem with fan 2 and fan 4 in fourth I/O subsystem (with IBF, moves to second rack)	1. DCA-2 Location U2.9–V2 2. Fan 2, Location U2.9–F2 3. Fan 4, Location U2.9–F4

Error Code	Description	Action/ Possible Failing FRU
1023 xx31	Fourth I/O subsystem (with IBF) in secondary rack I/O subsystem backplane 1 fault	U2.9-P1
1023 xx33	Seeprom fault on I/O subsystem backplane 1 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-P1
1023 xx41	Fourth I/O subsystem (with IBF) in secondary rack I/O subsystem backplane 2 fault	U2.9-P2
1023 xx43	Seeprom fault on I/O subsystem backplane 2 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-P2
1023 xx51	Fourth I/O subsystem (with IBF) in secondary rack DASD backplane 1 fault	U2.9-P3
1023 xx53	Seeprom fault on DASD backplane 1 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-P3
1023 xx61	Fourth I/O subsystem (with IBF) in secondary rack DASD backplane 2 fault	U2.9-P4
1023 xx63	Seeprom fault on DASD backplane 2 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-P4
1023 xx71	Fourth I/O subsystem (with IBF) in secondary rack DASD backplane 3 fault	U2.9-P5
1023 xx73	Seeprom fault on DASD backplane 3 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-P5
1023 xx81	Fourth I/O subsystem (with IBF) in secondary rack DASD backplane 4 fault	U2.9-P6
1023 xx83	Seeprom fault on DASD backplane 4 in fourth I/O subsystem (with IBF) in secondary rack	U2.9-P6

1024 1B17	Problem with fan 1 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-1
		   Location: U2.13-V1
		2. Fan 1
		   Location:U2.13-F1

1024 1B27	Problem with fan 2 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-2
		   Location: U2.13-V2
		2. Fan 2
		   Location:U2.13-F2

1024 1C06	Loss of airflow in third I/O subsystem in second rack (I/O subsystem 7), location: U2.13	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1024 6014	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6024	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6034	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1024 6044	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6054	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6814	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6824	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6834	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6844	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 6854	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 7017	Problem with fan 3 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-1 Location: U2.13-V1 2. Fan 3 Location: U2.13-F3
1024 7027	Problem with fan 4 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-2 Location: U2.13-V2 2. Fan 4 Location: U2.13-F4
1024 7117	Problem with fan 1 and fan 3 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-1 Location: U2.13-V1 2. Fans 1 and 3 Location: U2.13-F1 and U2.13-F3
1024 7127	Problem with fan 2 and fan 4 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-2 Location: U2.13-V2 2. Fans 2 and 4 Location: U2.13-F2 and U2.13-F4
1024 B014	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1024 B024	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B034	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B044	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B054	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B814	Overcurrent or overvoltage problem with 3.3V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B824	Overcurrent or overvoltage problem with 5.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B834	Overcurrent or overvoltage problem with 2.5V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B844	Overcurrent or overvoltage problem with 12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 B854	Overcurrent or overvoltage problem with -12.0V in third I/O subsystem in second rack (I/O subsystem 7). Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 CD96	A power short has been detected in the DASD subsystem in an I/O drawer. Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer. Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer. Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer. Location: U2.13	Go to "MAP 1520: Power" on page 139.
1024 F4x6	Hardware configuration does not support N-mode power.	Call Service Support

Error Code	Description	Action/ Possible Failing FRU
1024 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in third I/O subsystem in second rack (I/O subsystem 7), location: U2.13.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1024 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in third I/O subsystem in second rack (I/O subsystem 7), location: U2.13.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1024 xx11	Third I/O subsystem in second rack (I/O subsystem 7), DCA-1	U2.13-V1
1024 xx13	Seeprom fault on DCA-1 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-V1
1024 xx15	Third I/O subsystem in second rack (I/O subsystem 7), DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.13-V1/Q1 and U1.35-P2-X2/Q7 2. U2.13-V1/Q2 and U1.35-P1-X2/Q7
1024 xx17	Problem with fan 1 and fan 3 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-1 Location U2.13–V1 2. Fan 1, Location U2.13–F1 3. Fan 3, Location U2.13–F3
1024 xx21	Third I/O subsystem in second rack (I/O subsystem 7), DCA-2	U2.13-V2
1024 xx23	Seeprom fault on DCA-2 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-V2
1024 xx25	Third I/O subsystem in second rack (I/O subsystem 7), DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.13-V2/Q1 and U1.35-P2-X2/Q8 2. U2.13-V2/Q2 and U1.35-P1-X2/Q8
1024 xx27	Problem with fan 2 and fan 4 in third I/O subsystem in second rack (I/O subsystem 7)	1. DCA-2 Location U2.13–V2 2. Fan 2, Location U2.13–F2 3. Fan 4, Location U2.13–F4
1024 xx31	Third I/O subsystem in second rack (I/O subsystem 7) I/O subsystem backplane 1 fault	U2.13-P1

Error Code	Description	Action/ Possible Failing FRU
1024 xx33	Seeprom fault on I/O subsystem backplane 1 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-P1
1024 xx41	Third I/O subsystem in second rack (I/O subsystem 7) I/O subsystem backplane 2 fault	U2.13-P2
1024 xx43	Seeprom fault on I/O subsystem backplane 2 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-P2
1024 xx51	Third I/O subsystem in second rack (I/O subsystem 7) DASD backplane 1 fault	U2.13-P3
1024 xx53	Seeprom fault on DASD backplane 1 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-P3
1024 xx61	Third I/O subsystem in second rack (I/O subsystem 7), DASD backplane 2 fault	U2.13-P4
1024 xx63	Seeprom fault on DASD backplane 2 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-P4
1024 xx71	Third I/O subsystem in second rack (I/O subsystem 7), DASD backplane 3 fault	U2.13-P5
1024 xx73	Seeprom fault on DASD backplane 3 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-P5
1024 xx81	Third I/O subsystem in second rack (I/O subsystem 7) DASD backplane 4 fault	U2.13-P6
1024 xx83	Seeprom fault on DASD backplane 4 in third I/O subsystem in second rack (I/O subsystem 7)	U2.13-P6
1025 1B17	Problem with fan 1 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-1 Location: U2.19-V1 2. Fan 1 Location:U2.19-F1
1025 1B27	Problem with fan 2 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-2 Location: U2.19-V2 2. Fan 2 Location:U2.19-F2
1025 1C06	Loss of airflow in fourth I/O subsystem in second rack (I/O subsystem 8), location: U2.19	Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
1025 6014	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6024	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6034	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1025 6044	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6054	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6814	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6824	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6834	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6844	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 6854	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 7017	Problem with fan 3 in fourth I/O subsystem in second I/O subsystem in second rack (I/O subsystem 8)	1. DCA-1 Location: U2.19-V1 2. Fan 3 Location: U2.19-F3
1025 7027	Problem with fan 4 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-2 Location: U2.19-V2 2. Fan 4 Location: U2.19-F4
1025 7117	Problem with fan 1 and fan 3 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-1 Location: U2.19-V1 2. Fans 1 and 3 Location: U2.19-F1 and U2.19-F3
1025 7127	Problem with fan 2 and fan 4 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-2 Location: U2.19-V2 2. Fans 2 and 4 Location: U2.19-F2 and U2.19-F4
1025 B014	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B024	Overcurrent or overvoltage problem with 5.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B034	Overcurrent or overvoltage problem with 2.5V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B044	Overcurrent or overvoltage problem with 12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.

Error Code	Description	Action/ Possible Failing FRU
1025 B054	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B814	Overcurrent or overvoltage problem with 3.3V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B824	Overcurrent or overvoltage problem with 5.0V in second I/O subsystem in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B834	Overcurrent or overvoltage problem with 2.5V in second I/O subsystem in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B844	Overcurrent or overvoltage problem with 12.0V in second I/O subsystem in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 B854	Overcurrent or overvoltage problem with -12.0V in fourth I/O subsystem in second rack (I/O subsystem 8)	Go to "MAP 1520: Power" on page 139.
1025 CD96	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1025 CDA6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1025 CDB6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1025 CDC6	A power short has been detected in the DASD subsystem in an I/O drawer.	Go to "MAP 1520: Power" on page 139.
1025 F4x6	Hardware configuration does not support N-mode power.	Call Service Support
1025 F516	An N+1 boundary (DCA or fan) has dropped to N-mode status in fourth I/O subsystem in second rack (I/O subsystem 8), location: U2.19.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1025 F526	An N+1 boundary (DCA or fan) has dropped to N-mode status in fourth I/O subsystem in second rack (I/O subsystem 8), location: U2.19.	This is normally an informational message. It should be accompanied by other error codes that more precisely indicate where the failure is. Examine the service processor error log. If there are no other power-related error codes (in the time frame in which this code was generated) in the service processor error log, the FRU indicated with this error code, if any, should be replaced.
1025 xx11	Fourth I/O subsystem in second rack (I/O subsystem 8), DCA-1	U2.19-V1
1025 xx13	Seeprom fault on DCA-1 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-V1

Error Code	Description	Action/ Possible Failing FRU
1025 xx15	Fourth I/O subsystem in second rack (I/O subsystem 8), DCA-1, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.19-V1/Q1 and U1.35-P2-X2/Q9 2. U2.19-V1/Q2 and U1.35-P1-X2/Q9

1025 xx17	Problem with fan 1 and fan 3 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-1
		   Location U2.19–V1
		2. Fan 1,
		   Location U2.19–F1
		3. Fan 3,
		   Location U2.19–F3

1025 xx21	Fourth I/O subsystem in second rack (I/O subsystem 8), DCA-2	U2.19-V2
1025 xx23	Seeprom fault on DCA-2 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-V2
1025 xx25	Fourth I/O subsystem in second rack (I/O subsystem 8), DCA-2, cable fault	Go to "MAP 1520: Power" on page 139 with these pairs of location codes: 1. U2.19-V2/Q1 and U1.35-P2-X2/Q10 2. U2.19-V2/Q2 and U1.35-P1-X2/Q10

1025 xx27	Problem with fan 2 and fan 4 in fourth I/O subsystem in second rack (I/O subsystem 8)	1. DCA-2
		   Location U2.19–V2
		2. Fan 2,
		   Location U2.19–F2
		3. Fan 4,
		   Location U2.19–F4

1025 xx31	Fourth I/O subsystem in second rack (I/O subsystem 8) I/O subsystem backplane 1 fault	U2.19-P1
1025 xx33	Seeprom fault on I/O subsystem backplane 1 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-P1
1025 xx41	Fourth I/O subsystem in second rack (I/O subsystem 8) I/O subsystem backplane 2 fault	U2.19-P2
1025 xx43	Seeprom fault on I/O subsystem backplane 2 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-P2
1025 xx51	Fourth I/O subsystem in second rack (I/O subsystem 8) DASD backplane 1 fault	U2.19-P3
1025 xx53	Seeprom fault on DASD backplane 1 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-P3
1025 xx61	Fourth I/O subsystem in second rack (I/O subsystem 8), DASD backplane 2 fault	U2.19-P4
1025 xx63	Seeprom fault on DASD backplane 2 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-P4
1025 xx71	Fourth I/O subsystem in second rack (I/O subsystem 8), DASD backplane 3 fault	U2.19-P5

Error Code	Description	Action/ Possible Failing FRU
1025 xx73	Seeprom fault on DASD backplane 3 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-P5
1025 xx81	Fourth I/O subsystem in second rack (I/O subsystem 8) DASD backplane 4 fault	U2.19-P6
1025 xx83	Seeprom fault on DASD backplane 4 in fourth I/O subsystem in second rack (I/O subsystem 8)	U2.19-P6
1RRU 1C06		Go to "MAP 1527: An Airflow Loss Has Been Detected" on page 155.
SPCNtoA		Go to "MAP 1529: There Is A Bulk Power Assembly (BPA) Communication Failure" on page 157.
SPCNtoB		Go to "MAP 1529: There Is A Bulk Power Assembly (BPA) Communication Failure" on page 157.

Firmware/POST Error Codes

Attention: If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154*x* by the error code. Otherwise call service support if the action(s) for an error code do not resolve the problem.

Attention: If the error code that brought you to this chapter originated in the operating system error log, remember that an error may require an additional 15 minutes to be propagated to the operating system error log.

If you replace FRUs and the problem is corrected, go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Error Code	Description	Action/ Possible Failing FRU
2011 00xy	I/O subsystem power supply failure	1. Replace power supply "y" in I/O subsystem "x". If y=_, then the power supply is: ```\ny = power supply\n3 = Both power supplies\n (I/O subsystem)\n2 = Reserved\n\n1 = Reserved\n``` See "AIX and Physical Location Code Tables" in Chapter 1, for location codes. 2. Check ac power source to I/O subsystem "x". See "AIX and Physical Location Code Tables" in Chapter 1, for location codes.
2022 0000	The I/O bus is running slowly	1. Check cabling. 2. Call second level of support.

Error Code	Description	Action/ Possible Failing FRU

203w 0xyz	Remote I/O (RIO) configuration warning.
	
	This code indicates that a RIO configuration was detected that does not result in complete loops. The system continues to boot, however performance or recovery capability may be reduced. In some cases, the problem may result in missing I/O. Remote I/O subsystems are connected in loops. Use the letters w, y, and z in the error code to isolate the location of the open loop. Check RIO cables for loose connections, and verify power on the I/O subsystems by the presence of fan motion.
	
	The following numbers may be used to help isolate the failing component.
	• w = loop number, this is either 0 or 1 in a system with 2 RIO loops.
	• x = Always 0.
	• y is either 1 or 2 on a system with 2 loops. y indicates the nearest associated RIO port number on the processor subsystem according to the following table:
	
	`y = Nearest RIO Port`
	`1 = 0`
	`2 = 1`
	`3 = 2`
	`4 = 3`
	• z = B, indicates a missing return line from the I/O subsystem to the processor subsystem.
	• z = C, indicates a missing link between two I/O subsystems.
	• z = E, indicates an I/O subsystem was found connected to RIO port 3 with no return to the processor subsystem, and no I/O subsystem was found connected to RIO port 2. In this case, the I/O connected to RIO port 3 is removed from the configuration since the cause of the error and the proper location of the I/O cannot be determined.
		Go to "MAP 1542: I/O Problem Isolation" on page 261.

20A8 0000	Insufficient information to boot.	Verify the IP address in the SMS menu.
20A8 0001	Client IP address is already in use by other network device	Verify the IP address in the SMS menu.
20A8 0002	Cannot get gateway IP address	Refer to Table 1 on page 313 using code **E174**.
20A8 0003	Cannot get server hardware address	Refer to Table 1 on page 313 using code **E174**.
20A8 0004	BootP failed	Refer to Table 1 on page 313 using code **E175**.
20A8 0005	File transmission (TFTP) failed.	Check network connection, try again.
20A8 0006	Boot image too large	Contact your next level of support for assistance.

Error Code	Description	Action/ Possible Failing FRU
20D0 0001	I/O subsystem has changed locations	This is an informational message. The I/O subsystem at the location code associated with this messages was found at another location code during a prior boot of the system. If an I/O subsystem has not been moved, complete the following steps: 1. Boot the system and match the I/O subsystem location codes reported by the operating system to the subsystems attached to the CEC. Check the SPCN and RIO cabling to the I/O subsystems. If a cabling problem is found, correct it. 2. If no cabling problem is found, call your next level of support.
20D0 000F	Self-test failed on device, no error and/or location code information available	Refer to "Determining Location Code" on page 343 to see if a location code is available for the device the error was reported against. 1. Replace device indicated by the location code (if available). 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
20D0 0010	Selftest failed on device, cannot locate package	Contact your next level of support for assistance.
20D0 0011	Firmware RTAS attempt to allocate memory failed.	Contact your next level of support for assistance.
20D0 0800	Firmware update failure: partition does not have service authority	Using the HMC, grant service authority to that partition. Reboot the partition. Retry the flash update.
20D0 0801	System firmware update failure: more than one partition running	Shut down all other partitions, then retry the firmware update.
20D0 0997	Operating system terminated with error string	Call service support. A hypervisor dump may be available; see "Hypervisor Dump Retrieval Procedure" on page 666.
20D0 0A01	Error initializing RTAS NVRAM	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A02	Error initializing RTAS debugging token	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A03	Error initializing interface/service processor access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.

Error Code	Description	Action/ Possible Failing FRU
20D0 0A04	Error initializing interface/ operator panel access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A05	Error initializing hardware access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A06	Error initializing interface/PCI access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A07	Error initializing interface/operating system access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A08	Error initializing interface/ client_interface access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A09	Error initializing interface/NUMA access	1. Check for system firmware updates. Apply update if available. 2. Check for system firmware updates. Apply update if available.
20D0 0A0A	Error initializing interface/interrupt access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A0B	Error initializing interface/OFDT access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A0C	Error initializing interface/sensor access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A0D	Error initializing interface/sensors/led_table access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A0E	Error initializing interface/timebase access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.

Error Code	Description	Action/ Possible Failing FRU
20D0 0A0F	Error initializing interface/time-of-day access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A10	Error initializing interface/cache access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/power access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/hot-plug access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/log access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/EEH access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/error injection access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/handling access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing interface/utility access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0A1	Error initializing register softpatch access	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D0 0998	Operating system terminated with error string	Call service support. A hypervisor dump may be available; see "Hypervisor Dump Retrieval Procedure" on page 666.

Error Code	Description	Action/ Possible Failing FRU
20D0 0999	Operating system terminated with error string	Call service support. A hypervisor dump may be available; see "Hypervisor Dump Retrieval Procedure" on page 666.
20D0 9001	Subsystem information not found in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D0 9002	Subsystem machine type and model information not found in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D0 9003	Subsystem serial number information not found in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D0 9004	Subsystem machine type and model field is empty in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.

Error Code	Description	Action/ Possible Failing FRU
20D0 9005	Subsystem serial number field is empty in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D0 9006	Duplicate subsystem serial number found in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D0 9007	Invalid subsystem machine type and model information in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D0 9008	Invalid subsystem serial number found in VPD	1. If the location code starts with U1.17 or U1.18, the problem is in the system VPD module on the media subsystem operator panel. Replace the operator panel; do not swap the old VPD module onto the new operator panel. Call service support for instructions on programming the VPD information into the new VPD module. 2. If the location code indicates an I/O subsystem, call service support.
20D1 0001	Failed to send state-change message to service processor	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0002	Failed to disable heartbeat alarm	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.

Error Code	Description	Action/Possible Failing FRU
20D1 0003	Failed to send boot status in LPAR partition	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0004	Failed to locate service processor device tree node	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0005	Failed to reboot system in LPAR mode	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0006	Failed to reboot a partition in LPAR mode	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0007	Failed to set PCI read/write permissions array	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0008	Failed to set PCI read/write permissions array for slot	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0009	Missing or invalid subsystem serial number	1. Check for system firmware updates. Apply update if available. 2. If a location code is shown with this error code, replace the part at that location. 3. Contact your next level of support for assistance. **Note:** The location code identifies the failing subsystem.
20D1 000A	Failed to send boot failed message to service processor	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 000B	Failed to reset PCI read/write permissions array	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 000C	Failed to send LMB-TABLE-INFO mailbox repair	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.

Error Code	Description	Action/ Possible Failing FRU
20D1 000D	Hypervisor function to get time-of-day failed	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 000F	Hypervisor call to reset PHB or to check for drawer existence failed	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0010	Stack underflow from fiber channel adapter	1. Check for microcode updates for the fiber channel adapter. Apply update if available. 2. Check for system firmware updates. Apply update if available. 3. Contact your next level of support for assistance.
20D1 0011	PHB recovery was not successful. Open firmware received failure in phb-recovery-buff	1. Check for system firmware updates. Apply update if available. 2. Contact your next level of support for assistance.
20D1 0012	Attention: One of the I/O subsystems has been disconnected from the system	This indicates that an I/O subsystem that was previously in the configuration was not found during the current boot. If an I/O subsystem has been removed, this code is an informational message. If this message occurs during a system boot when the system's drawer configuration has not changed, complete the following steps: 1. If not already booted, boot the system and match the I/O subsystem location codes reported by the operating system to the subsystems attached to the CEC. Check the SPCN and RIO cabling to the I/O subsystems. If a cabling problem is found, correct it. 2. Check for system firmware updates. Apply update if available. 3. Contact your next level of support for assistance.
20E0 0001	Privileged-access password entry error.	The password has been entered incorrectly. Try installing the password again.
20E0 0004	Battery drained or needs replacement	1. Replace the battery, Location: U1.18-P1-H2-V1 2. If problem persists, replace the primary I/O book, Location: U1.18-P1-H2
20E0 0009	Invalid password entered - system locked	The password has been entered incorrectly 3 times. Turn off, then turn on the system unit, then enter the password correctly.

Error Code	Description	Action/ Possible Failing FRU
20EE 0003	IP parameter requires 3 dots ″.″	Enter valid IP parameter. Example: 000.000.000.000
20EE 0004	Invalid IP parameter	Enter valid IP parameter. Example: 000.000.000.000
20EE 0005	Invalid IP parameter (>255)	Enter valid IP parameter. Example: 255.192.002.000
20EE 0007	Keyboard not found	1. Plug in keyboard. 2. Replace the USB card the keyboard is plugged into.
20EE 0008	No configurable adapters found in the system by the remote IPL menu in the SMS utilities	This error occurs when the remote IPL menu in the SMS utilities cannot locate any LAN adapters that are supported by the remote IPL function. If a supported device is installed: 1. Replace the adapter. (See notes on page 341.) 2. Replace the I/O subsystem backplane in the subsystem(s) containing the device/adapter.
20EE 0009	Unable to communicate with the service processor	Replace the primary I/O book, Location: U1.18-P1-H2
20EE 000A	The image size on the boot or installation device exceeds the system firmware memory limitations.	1. Check for system firmware updates. Apply if available. 2. Call service support.
20EE 000B	The system was not able to find an operating system on the devices in the boot list.	Go to "Boot Problems" on page 338.

Error Code	Description	Action/ Possible Failing FRU
20EE 000C	Pointer to the operating system found in non-volatile storage.	Values normally found in non-volatile storage that point to the location of an operating system were not found. This can happen for two reasons: • Either your operating system doesn't support storing the values or • An event occurred that caused the system to lose non-volatile storage information (drainage or replacement of the battery). If you are running AIX, reconstruct this information by running the **bootlist** command and specifying the device that the operating system is installed on. See the AIX documentation for the syntax and usage of the **bootlist** command. To boot the operating system so that the above-mentioned values can be reconstructed, power the system down and power it back on again to cause the system to look for the operating system in the devices contained in the custom boot list or in the default boot list, depending on the condition of the system. If this is not successful, use the SMS menus to modify the boot sequence (also known as the boot list) to include devices that are known to contain a copy of the operating system. For example, select a hard disk known to have a copy of the operating system as the first and only device in the boot sequence and attempt to boot again. If the problem persists, replace the primary I/O book, Location: U1.18-P1-H2
20EE 000E	Unable to execute the lpar-mgr open firmware method	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.
20EE 000F	Unable to find the lpar-mgr package node	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.
20EE 0010	Unable to execute the root vpd method	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
20EE 0011	Unable to execute the root-lpar-vpd vpd method	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.
20EE 0012	Unable to execute the mem-dimm-vpd method	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.
20EE 0013	Unable to allocate memory for root-lpar-vpd vpd	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.
20EE 0014	Unable to allocate memory for root-lpar-vpd location codes	Verify that the system is in LPAR mode, and try again. Otherwise, the system firmware may be damaged.
20EE 0020	The **boot-device** environment variable exceeds the allowed character limit	If this error occurs during the installation of AIX via a process called *NIM push*, the **set_bootlist** attribute may not have been set correctly on the NIM master. See the *AIX 5.2 Installation Guide and Reference*, order number SC23-4389, for more information. If this error occurs at any other time, complete the following steps: 1. Check for platform firmware updates. Apply if available. 2. Call service support.
20EE 0021	The **boot-device** environment variable contained more than five entries	If this error occurs during the installation of AIX via a process called *NIM push*, the **set_bootlist** attribute may not have been set correctly on the NIM master. See the *AIX 5.2 Installation Guide and Reference*, order number SC23-4389, for more information. If this error occurs at any other time, complete the following steps: 1. Check for platform firmware updates. Apply if available. 2. Call service support.

Error Code	Description	Action/ Possible Failing FRU
20EE 0022	The **boot-device** environment variable contained an entry that exceeded 255 characters in length	If this error occurs during the installation of AIX via a process called *NIM push*, the **set_bootlist** attribute may not have been set correctly on the NIM master. See the *AIX 5.2 Installation Guide and Reference*, order number SC23-4389, for more information. If this error occurs at any other time, complete the following steps: 1. Check for platform firmware updates. Apply if available. 2. Call service support.
20EE 0100	Fcode resident on an I/O adapter is not supported on this system	Informational message. The adapter's Fcode driver is not supported on this system. IBM may produce a compatible driver in the future, but does not guarantee one. Additional information may be available from service support. This error code only affects boot-time operation, not the adapter's functionality under the operating system.
20FB 0010	Failed to find keyword offset of SPCN configuration table in NVRAM.	Call service support.
20FB 0020	Invalid SPCN configuration table flag before SPCN table update.	Call service support.
20FC 0020	Failed to retrieve power, package, and/or cooling VPD via SPCN for the corresponding subsystem. Service processor mailbox failed to get VPD	1. Check RIO cable connection. 2. Check for system firmware updates. 3. Replace the part specified by the location code.
20FC 0021	Failed to retrieve power, package, and/or cooling VPD via SPCN for the subsystem. Service processor mailbox failed to get power, packaging, and cooling device VPD	1. Check RIO cable connection. 2. Check for system firmware updates. 3. Replace the part specified by the location code.
20FC 0030	Damaged power, packaging, and/or cooling device VPD format in SPCN configuration table	1. Check for system firmware updates. 2. Replace the part specified by the location code.
20FF 0001	Problem with VPD	1. Replace the part indicated by the location code. 2. If no location code is shown with the error code, call service support.
2100 0xxx	SCSI controller fault	Before replacing any system components, refer to the notes in error code 21A0 0001. 1. Replace the SCSI device.

Error Code	Description	Action/ Possible Failing FRU
21A0 0001	SCSI DASD: test unit ready failed; hardware error	Before replacing any system components: 1. Ensure that the controller and each device on the SCSI bus is assigned a unique SCSI ID. 2. Ensure that the SCSI bus is properly terminated. 3. Ensure that the SCSI signal and power cables are securely connected and not damaged. The location code information is required to identify the ID of SCSI device failures as well as to indicate the location of the controller to which the device is attached. Check the system error logs to determine the location code information associated with the error code. 1. Replace the SCSI device. 2. Replace the SCSI cable. 3. Replace the SCSI controller.
21A0 0002	SCSI DASD: test unit ready failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the media (if a removable media device). 2. Replace the SCSI device.
21A0 0003	SCSI DASD: send diagnostic failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21A0 0004	SCSI DASD: send diagnostic failed - devofl command	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21E0 0001	SCSI tape: test unit ready failed; hardware error	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the SCSI cable. 3. Replace the SCSI controller.
21E0 0002	SCSI tape: test unit ready failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the media (if a removable media device). 2. Replace the SCSI device.
21E0 0003	SCSI tape: send diagnostic failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.

Error Code	Description	Action/ Possible Failing FRU
21E0 0004	SCSI tape: send diagnostic failed - devofl command	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21ED 0001	SCSI C: test unit ready failed; hardware error	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the SCSI cable. 3. Replace the SCSI controller.
21ED 0002	SCSI changer: test unit ready failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the media.
21ED 0003	SCSI changer: send diagnostic failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21ED 0004	SCSI changer: send diagnostic failed - devofl command	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21EE 0001	Undetermined SCSI device: test unit ready failed; hardware error	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the SCSI cable. 3. If the missing SCSI devices are connected to the same backplane, replace the SCSI backplane. 4. Replace the SCSI controller.
21EE 0002	Undetermined SCSI device: test unit ready failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the media.
21EE 0003	Undetermined SCSI device: send diagnostic failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21EE 0004	Undetermined SCSI device: send diagnostic failed - devofl command	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.

Error Code	Description	Action/ Possible Failing FRU
21F0 0001	SCSI CD-ROM: test unit ready failed; hardware error	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the SCSI cable. 3. Replace the SCSI controller.
21F0 0002	SCSI CD-ROM: test unit ready failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the media.
21F0 0003	SCSI CD-ROM: send diagnostic failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21F0 0004	SCSI CD-ROM: send diagnostic failed - devofl command	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI device.
21F2 0001	SCSI read/write optical device: test unit ready failed; hardware error	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the SCSI cable. 3. Replace the SCSI controller.
21F2 0002	SCSI read/write optical device: test unit ready failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. 1. Replace the SCSI device. 2. Replace the media.
21F2 0003	SCSI read/write optical drive: send diagnostic failed; sense data available	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI drive.
21F2 0004	SCSI read/write optical drive: send diagnostic failed - devofl command	Before replacing any system components, refer to the Action under error code 21A0 0001. Replace the SCSI drive.
2200 0001	PCI Ethernet BNC/RJ-45 or PCI Ethernet AUI/RJ-45 Adapter Internal Wrap Test failure	Replace the Adapter. See "Determining Location Code" on page 343 for location code information related to this error.
2200 1001	10/100 Mbps Ethernet PCI Adapter Internal Wrap Test failure	Replace the adapter. See "Determining Location Code" on page 343 for location code information related to this error.

Error Code	Description	Action/ Possible Failing FRU
2200 1002	10/100 Mbps Ethernet PCI Adapter failure	Replace the adapter. See "Determining Location Code" on page 343 for location code information related to this error.
2201 0001	PCI Auto LANstreamer Token Ring Adapter Adapter failed to complete hardware initialization.	Replace the adapter. See "Determining Location Code" on page 343 for location code information related to this error.
2201 1001	PCI Token Ring Adapter Adapter failed to complete hardware initialization.	Replace the adapter. See "Determining Location Code" on page 343 for location code information related to this error.
20EE 0013	Unable to allocate memory for root-lpar-vpd vpd	1. Verify that the system is in LPAR mode, and reboot the system. 2. Reflash the system with the latest level of system firmware. 3. Call service support.
25A0 0001	L2 Cache controller failure	Replace the MCM module specified by the location code.
25A1 0001	L2 Cache SRAM failure	Replace the MCM module specified by the location code.
25A8 0xxx	NVRAM problems	Errors reported against NVRAM can be caused by low battery voltage and (more rarely) power outages that occur during normal system usage. With the exception of the 25A8 0000 error, these errors are warnings that the NVRAM data content had to be reestablished and do not require any FRU replacement unless the error is persistent. When one of these errors occurs, any system customization (for example, boot device list) information has been lost, the system may need to be reconfigured. If the error is persistent, replace the primary I/O book, Location: U1.18-P1-H2
25A8 0000	Initialization failed, device test failed	Refer to Action under error code 25A8 0xxx
25A8 0100	NVRAM data validation check failed.	Turn off, turn on system unit and retry the operation before replacing any system component. Refer to Action under error code 25A8 0xxx
25A8 0201	Unable to expand target partition - Saving configuration variable.	Refer to Action under error code 25A8 0xxx
25A8 0202	Unable to expand target partition - Writing error log entry.	Refer to Action under error code 25A8 0xxx
25A8 0203	Unable to expand target partition - Writing VPD data.	Refer to Action under error code 25A8 0xxx

Error Code	Description	Action/ Possible Failing FRU
25A8 0210	Setenv/$Setenv parameter error - name contains a null character.	Refer to Action under error code 25A8 0xxx
25A8 0211	Setenv/$Setenv parameter error - value contains a null character.	Refer to Action under error code 25A8 0xxx
25A8 0215	NVRAM RIO-USR-select variable not found	Complete the following: 1. Check for platform firmware updates. Apply if available. 2. Call service support.

25A8 0998	NVRAMRC script evaluation error - command line execution error	Execution of a command line within the nvram configuration variable "nvramrc" (script) resulted in a "throw" being executed. This script can be modified by the system firmware **SMS** utilities, the operating system, PCI adapter rom code or utility, or an operator (via the open firmware script editing command **nvedit**). It may not be possible to resolve the problem without a detailed analysis of the **nvram** script, the current system configuration, and device tree contents.
		1. The problem can be caused by a SCSI adapter, whose SCSI bus ID has been changed from the default setting, no longer appearing in the system. This can be caused either by removing a SCSI adapter, or by a problem with a SCSI adapter.
		  a. Select the SCSI ID utility from the **SMS** menu(s).
		    1) Verify the list of SCSI controllers/adapters. If the list is not correct, suspect a problem with the adapter(s) installed but not listed.
		    2) Select the option to Save the configuration information.
		    3) Restart the system.
		  b. If the problem persists, boot the operating system and verify the SCSI bus IDs of any installed/available SCSI controllers (change as necessary), and restart the system.
		2. Contact your support representative for further assistance.

25A8 0999	NVRAMRC script evaluation error - stack unbalanced on completion	This is a firmware debug environment error. There is no user action or FRU replacement for this error. If this error persists, call service support.
25A8 0A00	Unable to retrieve NVRAM LPAR table information	Refer to the actions for error code 25A8 0xxx.
25B0 0001	Memory book failure	Replace the memory book specified by the location code.
25B0 0004	Memory book is not supported	Replace the unsupported memory book(s) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
25Cy y001	Memory book is not supported	Replace unsupported memory book(s) specified by the location code.
25Cy y002	Memory book failure	Replace the memory book(s) specified by the location code.
2601 0000	Boot failed because the RIO cables, or the power subsystem cables, are not routed correctly to the I/O subsystems	1. Check both ends of the RIO cable specified in the location code that appears with this error code. 2. Determine which I/O subsystem is at the end of the RIO cable specified by the location code shown with this error code. Check both ends of the power cables going to both DCAs in that I/O subsystem. For information about I/O cabling and connector locations, see "I/O Book Connector Locations" on page 19 and "Subsystem Positioning and Cabling" on page 34. **Note:** The port location code identifies the I/O book number.
2601 0001	Boot failed because the I/O subsystem has not been programmed correctly.	For information about I/O book cabling and connector locations, see "I/O Book Connector Locations" on page 19 and "Subsystem Positioning and Cabling" on page 34. 1. Ensure that power cables are correctly connected to drawers. 2. Firmware, including power code, may have to be flashed on both sides of the I/O subsystem. **Note:** The location code identifies the I/O subsystem that has the problem 3. Contact the next level of support.
2601 0002	RIO cable error or DCA power cable error detected on an I/O subsystem	1. Check both ends of the RIO cable specified in the location code that appears with this error code. 2. Determine which I/O subsystem is at the end of the RIO cable specified by the location code shown with this error code. Check the power cables going to both DCAs in that I/O subsystem. For information about I/O cabling and connector locations, see "I/O Book Connector Locations" on page 19 and "Subsystem Positioning and Cabling" on page 34. **Note:** The port location code identifies the I/O book number.

Error Code	Description	Action/ Possible Failing FRU
2602 0001	Invalid PCI adapter vendor ID	1. Move adapter to another slot (behind a different PCI bus). 2. Check for available firmware updates for adapter. Apply update if available. 3. Run AIX diagnostics on adapter. Replace if indicated. 4. Replace adapter. 5. Check for system firmware updates. Apply if update available. 6. Replace I/O subsystem backplane (See notes on Chapter 5, "Error Code to FRU Index", on page 341.)
2602 0002	Invalid PCI adapter device ID	1. Move adapter to another slot (behind a different PCI bus). 2. Check for available firmware updates for adapter. Apply update if available. 3. Run AIX diagnostics on adapter. Replace if indicated. 4. Replace adapter. 5. Check for system firmware updates. Apply if update available. 6. Replace I/O subsystem backplane. (See notes on Chapter 5, "Error Code to FRU Index", on page 341.)

2602 0007	PCI device I/O or memory space request could not be satisfied	1. If the location code identifies a slot:
		  a. Reseat the adapter and reboot the system.
		  b. Replace the adapter.
		  c. Check for system firmware updates. Apply if available.
		  d. Replace the I/O backplane in which the adapter is installed.
		2. If the location code identifies an I/O planar:
		  a. Check for system firmware updates. Apply if available.
		  b. Replace the I/O backplane.
		3. Call service support.

2602 0008	PCI device Fcode evaluation error	1. If the location code identifies a slot:
		  a. Check for adapter firmware updates. Apply if available.
		  b. Replace the adapter.
		  c. Check for system firmware updates. Apply if available.
		2. If the location code identifies an I/O planar:
		  a. Check for system firmware updates. Apply if available.
		  b. Replace the I/O planar.
		3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
2602 0010	PCI probe error, bridge in freeze state If the location code identifies a slot or PCI adapter: 1. Check for system firmware updates. Apply if update available. 2. Check the cabling to the adapter (in particular, the adapters that have serial ports). Serial ports may require null modems or special cabling configurations to avoid connecting driver outputs together. This may create a PCI slot power problem and force the adapter to be deconfigured. 3. Use the hot plug service aid to reseat the adapter specified by the location code. See "Removing a Hot-Pluggable PCI Adapter" on page 833. If reseating the adapter fixes the problem, go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems* manual. If the problem is not resolved, continue with 4. 4. Use the hot plug task to move the adapter to another slot (behind a different PCI bridge). The "I/O Subsystem PCI and PCI-X PHB and PCI and PCI-X Slot Locations" on page 26 identifies the PCI bridges and the associated slots. See "Removing a Hot-Pluggable PCI Adapter" on page 833 when removing the adapter, and "Installing a Hot-Pluggable PCI Adapter" on page 831 when installing the adapter in the new slot. If the adapter is successfully reconfigured in the new slot (behind a different PCI bridge), the slot in which the adapter was originally plugged is bad. Replace the I/O backplane assembly that contains the slot in which the adapter was originally installed, location: Ux.y-Pz. If the adapter does not reconfigure successfully in the new slot, replace the adapter. 5. Go to "MAP 1542: I/O Problem Isolation" on page 261. If the location code does not identify a slot or PCI adapter or no location code is specified, go to "MAP 1542: I/O Problem Isolation" on page 261.	
2602 0011	PCI probe error, bridge is not usable	If the location code identifies a slot: 1. Check the cabling to the adapter (in particular, the adapters that have serial ports). Serial ports may require null modems or special cabling configurations to avoid connecting driver outputs together. This may create a PCI slot power problem and force the adapter to be deconfigured. 2. Move adapter to another slot (behind a different PCI bus). 3. Check for available firmware updates for adapter. Apply update if available. 4. Replace adapter. 5. Check for system firmware updates. Apply if update available. 6. Replace I/O subsystem backplane (See notes on Chapter 5, "Error Code to FRU Index", on page 341.) If the location code identifies an I/O subsystem backplane: 1. Check for system firmware updates. Apply if update is available. 2. Replace I/O subsystem backplane.

Error Code	Description	Action/ Possible Failing FRU
2602 0012	PCI device run-time error, bridge in freeze state	If the location code identifies a slot: 1. Check the cabling to the adapter (in particular, the adapters that have serial ports). Serial ports may require null modems or special cabling configurations to avoid connecting driver outputs together. This may create a PCI slot power problem and force the adapter to be deconfigured. 2. Move adapter to another slot (behind a different PCI bus). 3. Check for available firmware updates for adapter. Apply update if available. 4. Replace adapter. 5. Check for system firmware updates. Apply if update available. 6. Replace I/O subsystem backplane (See notes on Chapter 5, "Error Code to FRU Index", on page 341). If the location code identifies an I/O subsystem backplane: 1. Check for system firmware updates. Apply if update is available. 2. Replace I/O subsystem backplane.
2680 0Axy	MX-PCI Bridge Bist Failure	The problem is associated with bridge ″y″ in I/O subsystem ″x″. Replace the I/O board associated with x x = I/O subsystem 1=0 2=1 3=2 4=3 5=4 6=5 See "Determining Location Code" on page 343 or location code information related to this error.
2680 0Cxx	Machine Check occurred	1. Replace the part identified by the location code associated with this error code. 2. If the location code associated with this error code identifies an adapter, and replacing the adapter does not correct the problem, replace the I/O subsystem backplane. See "Determining Location Code" on page 343 for location code information related to this error.
2680 0Dxx	Machine check occurred; unable to isolate to a single device	Go to "MAP 1542: I/O Problem Isolation" on page 261.

Error Code	Description	Action/ Possible Failing FRU
27A0 0001	Error obtaining external RIO cable IDs	1. Check the SPCN and RIO cabling going to the I/O subsystem specified by the location code. 2. Check for system firmware updates. 3. Replace the I/O subsystem planar specified by the location code.
2803 0xxx	Real-time-clock (RTC) errors	
2803 0001	RTC not updating - RTC initialization required	Errors reported against the real-time clock can be caused by low battery voltage and (more rarely) power outages that occur during normal system usage. These errors are warnings that the RTC data content must be re-established and do not require any FRU replacement unless the error is persistent. When one of these errors occurs, the time and date information has been lost. To set/restore the time and date, use the operating system facility. If the error is persistent, replace the primary I/O book, Location: U1.18-P1-H2
2803 0002	Bad time/date values	1. Set time and date. 2. Refer to Action under error code 2803 0001.
2803 0003	RTC not updating - not correctable	Replace the primary I/O book, Location: U1.18-P1-H2
2803 0004	RTC operating mode parameters (for example, data mode) changed	1. Set time and date. 2. Refer to Action under error code 2803 0001.
2803 0005	RTC battery error	Replace the primary I/O book, Location: U1.18-P1-H2 **Note:** Passwords, time, and date must be reset.
2803 0010	The real-time-clock cannot be protected in the LPAR environment.	1. Check for system firmware updates. Apply if available. 2. Contact your next level of support.
2803 F003	Real-time-clock not updating - not correctable (detected by hypervisor)	Replace the primary I/O book, location: U1.18-P1-H2.
2900 0002	ISA keyboard/mouse controller failed self-test	Replace the primary I/O book, Location: U1.18-P1-H2
29A0 0003	ISA keyboard not present/detected	Replace the primary I/O book, Location: U1.18-P1-H2
29A0 0004	ISA keyboard stuck key detected	Replace the primary I/O book, Location: U1.18-P1-H2
29B0 0004	ISA mouse not present/detected	Replace the primary I/O book, Location: U1.18-P1-H2
2B20 0011	Processor is manually disabled.	Use the service processor menus to re-enable the processor and reboot the system.

Error Code	Description	Action/ Possible Failing FRU
2B20 0012	This is an informational code that is generated when the **cpu_deallocate** command is used to take a processor off-line.	There is no action required. To bring the processor back on-line, or back into the system or partition configuration, reboot the operating system.
2B20 0022	Processor is deconfigured by the system.	The processor has previously failed BIST or POST. Replace the processor MCM indicated by the location code associated with the error code in the error log.
2B20 0031	Processor is failing POST	Replace the processor MCM indicated by the location code associated with the error code in the error log.
2B20 0042	Unknown processor card	Remove the unknown/unsupported processor MCM.
2B20 8880	Unrecoverable processor subsystem error	If Linux is the only operating system on the failing system, call service support. If AIX is available, and the system is powered off, replace the FRU indicated in the service processor error log entry. If AIX is available and the system has been rebooted, run online AIX diagnostics and look for an AIX error log entry in which the description says cache or cache controller error. Replace the FRUs listed in this entry.
2B20 8881	Software error	Call service support.
2B20 8882	Software error	Call service support.
2B20 8883	Software error	Call service support.
2B20 8884	Unrecoverable processor subsystem error	If Linux is the only operating system on the failing system, call service support. If AIX is available, and the system is powered off, replace the FRU indicated in the service processor error log entry. If AIX is available and the system has been rebooted, run online AIX diagnostics and look for an AIX error log entry in which the description says cache or cache controller error. Replace the FRUs listed in this entry.
2B20 8885	Unrecoverable internal hardware error	If Linux is the only operating system on the failing system, call service support. If Aix is available, run online AIX diagnostics.Look for an AIX error log entry in which the description says I/O bus time out, access, or other error, or I/O bridge/device internal error. Replace the FRUs listed in this entry.
2B20 8888	Operating system termination request received	Informational message.

Error Code	Description	Action/ Possible Failing FRU
2B2x 00EE	An exception error has been reported on a global processor	The type of interrupt that caused the exception is specified by the x as follows: **0:** Unknown interrupt **1:** System reset interrupt (SRI) **2.** Machine check interrupt (MCI) **3.** Data storage interrupt (DSI) **4.** Instruction storage interrupt (ISI) **5.** External interrupt (EXI) **6.** Alignment interrupt (ALI) **7.** Program interrupt (SRI) **8.** Floating unavailable interrupt (FUI) 1. Check for system firmware updates. Apply if available. 2. Call service support.
2BA0 0000	Service processor POST failure	Replace the primary I/O book, Location: U1.18-P1-H2
2BA0 0012	Service processor reports self test failure	Replace the primary I/O book, Location: U1.18-P1-H2
2BA0 0013	Service processor reports bad NVRAM CRC	Refer to the actions for 25A8 0xxx.
2BA0 0017	Service processor reports bad or low battery.	Refer to the actions for 25A8 0xxx.
2BA0 0021	Open firmware mailbox call to activate attention LED failed	1. Check for system firmware updates. Apply if available. 2. Call service support.
2BA0 0041	Service processor VPD is damaged.	Replace the primary I/O book, Location: U1.18-P1-H2
2BA0 0071	VPD data is damaged for MCM 0	Replace the MCM and VPD card
2BA0 0073	VPD data is damaged for MCM 2	Replace the MCM and VPD card
2BA0 0080	Service processor hardware reset request failure	1. Check for system firmware updates. Apply if available. 2. Call service support.
2Cmm mhhh	A processor's timebase enable signal is stuck enabled	1. Replace the primary I/O book, location: U1.18-P1-H2. 2. hhh indicates the failing processor. Replace the MCM that contains the failing processor according to the following table: • hhh = 0 - 7: U1.18-P1-C1 • hhh = 8-15: U1.18-P1-C3 • hhh = 16-23: U1.18-P1-C4 • hhh = 24-31: U1.18-P1-C2

Error Code	Description	Action/ Possible Failing FRU
2Dmm mhhh	A processor's timebase enable signal is stuck disabled	1. Replace the primary I/O book, location: U1.18-P1-H2. 2. hhh indicates the failing processor. Replace the MCM that contains the failing processor according to the following table: • hhh = 0 - 7: U1.18-P1-C1 • hhh = 8-15: U1.18-P1-C3 • hhh = 16-23: U1.18-P1-C4 • hhh = 24-31: U1.18-P1-C2

Service Processor Error Codes

Attention: Follow the procedure defined in "Checkpoints and Error Codes Index" on page 344. If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154*x* by the error code. Otherwise call support if the action(s) for an error code do not resolve the problem.

Attention: If the error code that brought you to this chapter originated in the AIX error log, remember that an error may require an additional 15 minutes to be propagated to the AIX error log.

If you replace FRUs and the problem is corrected, go to *"MAP 0410: Repair Checkout"* in the *Diagnostic Information for Multiple Bus Systems*.

Note: The MCM and its associated VPD card are a single FRU, and must be replaced as a set.

Error Code	Description	Action/ Possible Failing FRU
4064 0001	Processor subsystem tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0002	Processor subsystem tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0003	Processor subsystem tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4064 0004	Processor subsystem tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4064 0005	Processor subsystem tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4064 0006	Processor subsystem tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4064 0007	Processor subsystem tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as "new defective".) 2. Primary I/O book Location: U1.18-P1-H2
4064 000A	Processor subsystem tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 000B	Processor subsystem tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 000C	Processor subsystem tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 000D	Processor subsystem tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0010	Processor subsystem tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
4064 0011	Processor subsystem tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
4064 0012	Processor subsystem tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7

Error Code	Description	Action/ Possible Failing FRU
4064 0013	Processor subsystem tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
4064 0014	Processor subsystem tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
4064 0015	Processor subsystem tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
4064 0016	Processor subsystem tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
4064 0017	Processor subsystem tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
4064 00B0	Processor subsystem tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4064 00B1	Processor subsystem tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4064 00B3	Processor subsystem tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4064 00B4	Processor subsystem tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4064 00B5	Processor subsystem tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4064 00B6	Processor subsystem tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4064 00B7	Processor subsystem tests detected Insufficient hardware resources to continue IPL after processor subsystem testing and initialization completed	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4064 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4064 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4064 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4064 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4064 0B00	Processor subsystem tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4064 0B01	Processor subsystem tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4064 0B02	Processor subsystem tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4064 0B03	Processor subsystem tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4064 0B10	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B11	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B12	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4064 0B13	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B14	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B15	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B16	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B17	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4064 0B20	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4064 0B21	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4064 0B22	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4064 0B23	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4064 0B24	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4064 0B25	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4064 0B26	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4064 0B27	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4064 0B30	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0B31	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0B32	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0B33	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0B34	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0B35	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4064 0B36	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0B37	Processor subsystem tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4064 0BF0	Processor subsystem tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H2/Q1 b. U1.18-P1-H2/Q2 2. Replace the primary I/O book, Location: U1.18-P1-H2
4064 0BF1	Processor subsystem tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H2/Q3 b. U1.18-P1-H2/Q4 2. Replace the primary I/O book, Location: U1.18-P1-H2
4064 0BF2	Processor subsystem tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H1/Q3 b. U1.18-P1-H1/Q4 2. Replace the RIO book, Location: U1.18-P1-H1
4064 0BF3	Processor subsystem tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H1/Q1 b. U1.18-P1-H1/Q2 2. Replace the RIO book, Location: U1.18-P1-H1
4064 0BF4	Processor subsystem tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q7 b. U1.18-P1-H3/Q8 2. Replace the RIO book, Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU
4064 0BF5	Processor subsystem tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H3/Q5 　b. U1.18-P1-H3/Q6 2. Replace the RIO book, Location: U1.18-P1-H3
4064 0BF6	Processor subsystem tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H4/Q5 　b. U1.18-P1-H4/Q6 2. Replace the RIO book, Location: U1.18-P1-H4
4064 0BF7	Processor subsystem tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H4/Q7 　b. U1.18-P1-H4/Q8 2. Replace the RIO book, Location: U1.18-P1-H4
4064 0BF8	Processor subsystem tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H1/Q7 　b. U1.18-P1-H1/Q8 2. Replace the RIO book, Location: U1.18-P1-H1
4064 0BF9	Processor subsystem tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H1/Q5 　b. U1.18-P1-H1/Q6 2. Replace the RIO book, Location: U1.18-P1-H1
4064 0BFA	Processor subsystem tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H3/Q3 　b. U1.18-P1-H3/Q4 2. Replace the RIO book, Location: U1.18-P1-H3
4064 0BFB	Processor subsystem tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H3/Q1 　b. U1.18-P1-H3/Q2 2. Replace the RIO book, Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

4064 0BFC	Processor subsystem tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H4.

4064 0BFD	Processor subsystem tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4064 0C03	Processor subsystem tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
4064 0C09	Processor subsystem tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
4064 0C0A	Processor subsystem tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
4064 0C10	Processor subsystem tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
4064 0C11	Processor subsystem tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
4064 0C12	Processor subsystem tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
4064 0C13	Processor subsystem tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
4064 0CA5	Processor subsystem tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.
4064 0CA6	Processor subsystem tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
4064 0CA9	Processor subsystem tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
4064 0D00	Processor subsystem tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
4064 0D01	Processor subsystem tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
4064 0D02	Processor subsystem tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
4064 0D03	Processor subsystem tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
4064 0D04	Processor subsystem tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
4064 0D05	Processor subsystem tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
4064 0D06	Processor subsystem tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
4064 0D07	Processor subsystem tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
4064 0D08	Processor subsystem tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
4064 0D09	Processor subsystem tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
4064 0D0A	Processor subsystem tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
4064 0D0B	Processor subsystem tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
4064 0D0C	Processor subsystem tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
4064 0D0D	Processor subsystem tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
4064 0D0E	Processor subsystem tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
4064 0D0F	Processor subsystem tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1
4064 0EA0	Processor subsystem tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
4064 0EA1	Processor subsystem tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
4064 0EA2	Processor subsystem tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
4064 0EA4	Processor subsystem tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
4064 0EAF	Processor subsystem tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
4064 0EB0	Processor subsystem tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4064 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4064 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

4064 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341.
		2. Examine the service processor error log.
		  • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code.
		  • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.

4064 0EE1	Processor subsystem tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
4064 0EE2	Processor subsystem tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
4064 0EE5	Processor subsystem tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
4065 0001	Display alter tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4065 0002	Display alter tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0003	Display alter tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4065 0004	Display alter tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4065 0005	Display alter tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4065 0006	Display alter tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4065 0007	Display alter tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as "new defective.") 2. Primary I/O book Location: U1.18-P1-H2
4065 000A	Display alter tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 000B	Display alter tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 000C	Display alter tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 000D	Display alter tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0010	Display alter tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
4065 0011	Display alter tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
4065 0012	Display alter tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
4065 0013	Display alter tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
4065 0014	Display alter tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
4065 0015	Display alter tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
4065 0016	Display alter tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
4065 0017	Display alter tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
4065 00B0	Display alter tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4065 00B1	Display alter tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4065 00B3	Display alter tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: 2U1.18-P1-C1 and U1.18-P1-H2.3
4065 00B4	Display alter tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4065 00B5	Display alter tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4065 00B6	Display alter tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4065 00B7	Display alter tests detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4065 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4065 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4065 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4065 0B00	Display alter tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4065 0B01	Display alter tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4065 0B02	Display alter tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4065 0B03	Display alter tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4065 0B10	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B11	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B12	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B13	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B14	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B15	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4065 0B16	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B17	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4065 0B20	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B21	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B22	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B23	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4065 0B24	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B25	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B26	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B27	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4065 0B30	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4065 0B31	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4065 0B32	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4065 0B33	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4065 0B34	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4065 0B35	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4065 0B36	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4065 0B37	Display alter tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

4065 0BF0	Display alter tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

4065 0BF1	Display alter tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU

4065 0BF2	Display alter tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q3
		  b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H1

4065 0BF3	Display alter tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q1
		  b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H1

4065 0BF4	Display alter tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q7
		  b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H3

4065 0BF5	Display alter tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q5
		  b. U1.18-P1-H3/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H3

4065 0BF6	Display alter tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q5
		  b. U1.18-P1-H4/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4065 0BF7	Display alter tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q7
		  b. U1.18-P1-H4/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4065 0BF8	Display alter tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q7
		  b. U1.18-P1-H1/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H1

Error Code	Description	Action/ Possible Failing FRU

4065 0BF9	Display alter tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book, Location: U1.18-P1-H1

4065 0BFA	Display alter tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book, Location: U1.18-P1-H3

4065 0BFB	Display alter tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book, Location: U1.18-P1-H3

4065 0BFC	Display alter tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book, Location: U1.18-P1-H4.

4065 0BFD	Display alter tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book, Location: U1.18-P1-H4

4065 0C03	Display alter tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
4065 0C09	Display alter tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
4065 0C0A	Display alter tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
4065 0C10	Display alter tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
4065 0C11	Display alter tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
4065 0C12	Display alter tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
4065 0C13	Display alter tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
4065 0CA5	Display alter tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.

Error Code	Description	Action/ Possible Failing FRU
4065 0CA6	Display alter tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
4065 0CA9	Display alter tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
4065 0D00	Display alter tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
4065 0D01	Display alter tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
4065 0D02	Display alter tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
4065 0D03	Display alter tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
4065 0D04	Display alter tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
4065 0D05	Display alter tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
4065 0D06	Display alter tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1
4065 0D07	Display alter tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
4065 0D08	Display alter tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
4065 0D09	Display alter tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
4065 0D0A	Display alter tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
4065 0D0B	Display alter tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
4065 0D0C	Display alter tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
4065 0D0D	Display alter tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
4065 0D0E	Display alter tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
4065 0D0F	Display alter tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
4065 0EA0	Display alter tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
4065 0EA1	Display alter tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
4065 0EA2	Display alter tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
4065 0EA4	Display alter tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
4065 0EAF	Display alter tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
4065 0EB0	Display alter tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4065 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4065 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
4065 0EE1	Display alter tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
4065 0EE2	Display alter tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
4065 0EE5	Display alter tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
4066 0001	Scan interface basic assurance tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0002	Scan interface basic assurance tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0003	Scan interface basic assurance tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4066 0004	Scan interface basic assurance tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4066 0005	Scan interface basic assurance tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4066 0006	Scan interface basic assurance tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4066 0007	Scan interface basic assurance tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as "new defective".) 2. Primary I/O book Location: U1.18-P1-H2
4066 000A	Scan interface basic assurance tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4066 000B	Scan interface basic assurance tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 000C	Scan interface basic assurance tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 000D	Scan interface basic assurance tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0010	Scan interface basic assurance tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
4066 0011	Scan interface basic assurance tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
4066 0012	Scan interface basic assurance tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
4066 0013	Scan interface basic assurance tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
4066 0014	Scan interface basic assurance tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
4066 0015	Scan interface basic assurance tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
4066 0016	Scan interface basic assurance tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
4066 0017	Scan interface basic assurance tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
4066 00B0	Possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4066 00B1	Possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4066 00B3	MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4066 00B4	MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4066 00B5	MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4066 00B6	MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6

Error Code	Description	Action/ Possible Failing FRU
4066 00B7	Hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4066 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4066 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4066 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4066 0B00	Scan interface basic assurance tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4066 0B01	Scan interface basic assurance tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4066 0B02	Scan interface basic assurance tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4066 0B03	Scan interface basic assurance tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4066 0B10	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B11	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B12	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4066 0B13	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B14	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B15	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B16	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B17	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4066 0B20	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4066 0B21	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4066 0B22	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4066 0B23	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4066 0B24	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4066 0B25	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4066 0B26	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4066 0B27	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4066 0B30	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4066 0B31	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4066 0B32	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4066 0B33	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4066 0B34	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4066 0B35	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4066 0B36	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4066 0B37	Scan interface basic assurance tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

4066 0BF0	Scan interface basic assurance tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H2/Q1
		   b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		    Location: U1.18-P1-H2

4066 0BF1	Scan interface basic assurance tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H2/Q3
		   b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		    Location: U1.18-P1-H2

4066 0BF2	Scan interface basic assurance tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q3
		   b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		    Location: U1.18-P1-H1

4066 0BF3	Scan interface basic assurance tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q1
		   b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		    Location: U1.18-P1-H1

4066 0BF4	Scan interface basic assurance tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q7
		   b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		    Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

4066 0BF5	Scan interface basic assurance tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q5
		  b. U1.18-P1-H3/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H3

4066 0BF6	Scan interface basic assurance tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q5
		  b. U1.18-P1-H4/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4066 0BF7	Scan interface basic assurance tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q7
		  b. U1.18-P1-H4/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4066 0BF8	Scan interface basic assurance tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q7
		  b. U1.18-P1-H1/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H1

4066 0BF9	Scan interface basic assurance tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q5
		  b. U1.18-P1-H1/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H1

4066 0BFA	Scan interface basic assurance tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q3
		  b. U1.18-P1-H3/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H3

4066 0BFB	Scan interface basic assurance tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q1
		  b. U1.18-P1-H3/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU
4066 0BFC	Scan interface basic assurance tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H4/Q1 b. U1.18-P1-H4/Q2 2. Replace the RIO book, Location: U1.18-P1-H4.
4066 0BFD	Scan interface basic assurance tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H4/Q3 b. U1.18-P1-H4/Q4 2. Replace the RIO book, Location: U1.18-P1-H4
4066 0C03	Scan interface basic assurance tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
4066 0C09	Scan interface basic assurance tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
4066 0C0A	Scan interface basic assurance tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
4066 0C10	Mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
4066 0C11	Mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
4066 0C12	Mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
4066 0C13	Mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
4066 0CA5	Scan interface basic assurance tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.
4066 0CA6	Scan interface basic assurance tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
4066 0CA9	Scan interface basic assurance tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
4066 0D00	Scan interface basic assurance tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
4066 0D01	Scan interface basic assurance tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
4066 0D02	Scan interface basic assurance tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
4066 0D03	Scan interface basic assurance tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
4066 0D04	Scan interface basic assurance tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
4066 0D05	Scan interface basic assurance tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
4066 0D06	Scan interface basic assurance tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
4066 0D07	Scan interface basic assurance tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
4066 0D08	Scan interface basic assurance tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
4066 0D09	Scan interface basic assurance tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
4066 0D0A	Scan interface basic assurance tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
4066 0D0B	Scan interface basic assurance tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
4066 0D0C	Scan interface basic assurance tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
4066 0D0D	Scan interface basic assurance tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
4066 0D0E	Scan interface basic assurance tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
4066 0D0F	Scan interface basic assurance tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1
4066 0EA0	Scan interface basic assurance tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
4066 0EA1	Scan interface basic assurance tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
4066 0EA2	Scan interface basic assurance tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
4066 0EA4	Scan interface basic assurance tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
4066 0EAF	Scan interface basic assurance tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
4066 0EB0	Scan interface basic assurance tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4066 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4066 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
4066 0EE1	Scan interface basic assurance tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
4066 0EE2	Scan interface basic assurance tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
4066 0EE5	Scan interface basic assurance tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
4067 0001	Bus tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4067 0002	Bus tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0003	Bus tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4067 0004	Bus tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4067 0005	Bus tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4067 0006	Bus tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4067 0007	Bus tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as "new defective".) 2. Primary I/O book Location: U1.18-P1-H2
4067 000A	Bus tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 000B	Bus tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 000C	Bus tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 000D	Bus tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0010	Bus tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
4067 0011	Bus tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
4067 0012	Bus tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
4067 0013	Bus tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
4067 0014	Bus tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
4067 0015	Bus tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
4067 0016	Bus tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
4067 0017	Bus tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
4067 00B0	Bus tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4067 00B1	Bus tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4067 00B3	Bus tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4067 00B4	Bus tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4067 00B5	Bus tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4067 00B6	Bus tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4067 00B7	Bus tests detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4067 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4067 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4067 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4067 0B00	Bus tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4067 0B01	Bus tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4067 0B02	Bus tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4067 0B03	Bus tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4067 0B10	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B11	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B12	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B13	Bus tests detected fault in I/O	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B14	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B15	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4067 0B16	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B17	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4067 0B20	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B21	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B22	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B23	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4067 0B24	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B25	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B26	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B27	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4067 0B30	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0B31	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0B32	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4067 0B33	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0B34	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0B35	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0B36	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0B37	Bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4067 0BF0	Bus tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H2/Q1 b. U1.18-P1-H2/Q2 2. Replace the primary I/O book, Location: U1.18-P1-H2
4067 0BF1	Bus tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H2/Q3 b. U1.18-P1-H2/Q4 2. Replace the primary I/O book, Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU

4067 0BF2	Bus tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q3
		   b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H1

4067 0BF3	Bus tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q1
		   b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H1

4067 0BF4	Bus tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q7
		   b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H3

4067 0BF5	Bus tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q5
		   b. U1.18-P1-H3/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H3

4067 0BF6	Bus tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q5
		   b. U1.18-P1-H4/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4067 0BF7	Bus tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q7
		   b. U1.18-P1-H4/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H4

4067 0BF8	Bus tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q7
		   b. U1.18-P1-H1/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H1

Error Code	Description	Action/ Possible Failing FRU

4067 0BF9	Bus tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

4067 0BFA	Bus tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

4067 0BFB	Bus tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

4067 0BFC	Bus tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H4.

4067 0BFD	Bus tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

4067 0C03	Bus tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
4067 0C09	Bus tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
4067 0C0A	Bus tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
4067 0C10	Bus tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
4067 0C11	Bus tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
4067 0C12	Bus tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
4067 0C13	Bus tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
4067 0CA5	Bus tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.

Error Code	Description	Action/ Possible Failing FRU
4067 0CA6	Bus tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
4067 0CA9	Bus tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
4067 0D00	Bus tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
4067 0D01	Bus tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
4067 0D02	Bus tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
4067 0D03	Bus tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
4067 0D04	Bus tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
4067 0D05	Bus tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
4067 0D06	Bus tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1
4067 0D07	Bus tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
4067 0D08	Bus tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
4067 0D09	Bus tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
4067 0D0A	Bus tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
4067 0D0B	Bus tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
4067 0D0C	Bus tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
4067 0D0D	Bus tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
4067 0D0E	Bus tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
4067 0D0F	Bus tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
4067 0EA0	Bus tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
4067 0EA1	Bus tests detected fault in processor subsystem code on main processor	1. Check for operating system update. 2. Call service support.
4067 0EA2	Bus tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
4067 0EA4	Bus tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
4067 0EAF	Bus tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
4067 0EB0	Bus tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4067 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4067 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

4067 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341.
		2. Examine the service processor error log.
		  • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code.
		  • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.

4067 0EE1	Bus tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
4067 0EE2	Bus tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
4067 0EE5	Bus tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
4068 0001	Other bus tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0002	Other bus tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0003	Other bus tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4068 0004	Other bus tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4068 0005	Other bus tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4068 0006	Other bus tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4068 0007	Other bus tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as "new defective".) 2. Primary I/O book Location: U1.18-P1-H2
4068 000A	Other bus tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4068 000B	Other bus tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 000C	Other bus tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 000D	Other bus tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0010	Other bus tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
4068 0011	Other bus tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
4068 0012	Other bus tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
4068 0013	Other bus tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
4068 0014	Other bus tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
4068 0015	Other bus tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
4068 0016	Other bus tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
4068 0017	Other bus tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
4068 00B0	Other bus tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4068 00B1	Other bus tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4068 00B3	Other bus tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4068 00B4	Other bus tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4068 00B5	Other bus tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4068 00B6	Other bus tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6

Error Code	Description	Action/ Possible Failing FRU
4068 00B7	Other bus tests detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4068 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4068 0A05	Reboot message (run-time array gard failure) for Processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware.
		If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.
		If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following:
		1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.)
		2. Boot the AIX diagnostic CD-ROM.
		3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected.
		If errors are reported against the hardware, follow the actions for the error code or SRN.
4068 0A06	Reboot message (run-time array gard failure) for Processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware.
		If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.
		If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following:
		1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.)
		2. Boot the AIX diagnostic CD-ROM.
		3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected.
		If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4068 0B00	Other bus tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4068 0B01	Other bus tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4068 0B02	Other bus tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4068 0B03	Other bus tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4068 0B10	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B11	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B12	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4068 0B13	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B14	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B15	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B16	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B17	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4068 0B20	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4068 0B21	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4068 0B22	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4068 0B23	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4068 0B24	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4068 0B25	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4068 0B26	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4068 0B27	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4068 0B30	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0B31	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0B32	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0B33	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0B34	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0B35	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4068 0B36	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0B37	Other bus tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4068 0BF0	Other bus tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H2/Q1 　b. U1.18-P1-H2/Q2 2. Replace the primary I/O book, Location: U1.18-P1-H2
4068 0BF1	Other bus tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H2/Q3 　b. U1.18-P1-H2/Q4 2. Replace the primary I/O book, Location: U1.18-P1-H2
4068 0BF2	Other bus tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H1/Q3 　b. U1.18-P1-H1/Q4 2. Replace the RIO book, Location: U1.18-P1-H1
4068 0BF3	Other bus tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H1/Q1 　b. U1.18-P1-H1/Q2 2. Replace the RIO book, Location: U1.18-P1-H1
4068 0BF4	Other bus tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports: 　a. U1.18-P1-H3/Q7 　b. U1.18-P1-H3/Q8 2. Replace the RIO book, Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU
4068 0BF5	Other bus tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q5 b. U1.18-P1-H3/Q6 2. Replace the RIO book, Location: U1.18-P1-H3
4068 0BF6	Other bus tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H4/Q5 b. U1.18-P1-H4/Q6 2. Replace the RIO book, Location: U1.18-P1-H4
4068 0BF7	Other bus tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H4/Q7 b. U1.18-P1-H4/Q8 2. Replace the RIO book, Location: U1.18-P1-H4
4068 0BF8	Other bus tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H1/Q7 b. U1.18-P1-H1/Q8 2. Replace the RIO book, Location: U1.18-P1-H1
4068 0BF9	Other bus tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H1/Q5 b. U1.18-P1-H1/Q6 2. Replace the RIO book, Location: U1.18-P1-H1
4068 0BFA	Other bus tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q3 b. U1.18-P1-H3/Q4 2. Replace the RIO book, Location: U1.18-P1-H3
4068 0BFB	Other bus tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q1 b. U1.18-P1-H3/Q2 2. Replace the RIO book, Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

4068 0BFC	Other bus tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H4.

4068 0BFD	Other bus tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

4068 0C03	Other bus tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
4068 0C09	Other bus tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
4068 0C0A	Other bus tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
4068 0C10	Other bus tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
4068 0C11	Other bus tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
4068 0C12	Other bus tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
4068 0C13	Other bus tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
4068 0CA5	Other bus tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.
4068 0CA6	Other bus tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
4068 0CA9	Other bus tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
4068 0D00	Other bus tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
4068 0D01	Other bus tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
4068 0D02	Other bus tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
4068 0D03	Other bus tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
4068 0D04	Other bus tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
4068 0D05	Other bus tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
4068 0D06	Other bus tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
4068 0D07	Other bus tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
4068 0D08	Other bus tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
4068 0D09	Other bus tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
4068 0D0A	Other bus tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
4068 0D0B	Other bus tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
4068 0D0C	Other bus tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
4068 0D0D	Other bus tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
4068 0D0E	Other bus tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
4068 0D0F	Other bus tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1
4068 0EA0	Other bus tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
4068 0EA1	Other bus tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
4068 0EA2	Other bus tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
4068 0EA4	Other bus tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
4068 0EAF	Other bus tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
4068 0EB0	Other bus tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4068 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4068 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
4068 0EE1	Other bus tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
4068 0EE2	Other bus tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
4068 0EE5	Other bus tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
4069 0001	Memory tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0002	Memory tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4069 0003	Memory tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4069 0004	Memory tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4069 0005	Memory tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4069 0006	Memory tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4069 0007	Memory tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as ″new defective″.) 2. Primary I/O book Location: U1.18-P1-H2
4069 000A	Memory tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 000B	Memory tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 000C	Memory tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 000D	Memory tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0010	Memory tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
4069 0011	Memory tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
4069 0012	Memory tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
4069 0013	Memory tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
4069 0014	Memory tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
4069 0015	Memory tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
4069 0016	Memory tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
4069 0017	Memory tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
4069 00B0	Memory tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4069 00B1	Memory tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
4069 00B3	Memory tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
4069 00B4	Memory tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
4069 00B5	Memory tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
4069 00B6	Memory tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
4069 00B7	Memory tests detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4069 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware.
		If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.
		If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following:
		1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.)
		2. Boot the AIX diagnostic CD-ROM.
		3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected.
		If errors are reported against the hardware, follow the actions for the error code or SRN.
4069 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware.
		If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.
		If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following:
		1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.)
		2. Boot the AIX diagnostic CD-ROM.
		3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected.
		If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
4069 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
4069 0B00	Memory tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4069 0B01	Memory tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4069 0B02	Memory tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
4069 0B03	Memory tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4069 0B10	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B11	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B12	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B13	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B14	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B15	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4069 0B16	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B17	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
4069 0B20	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B21	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B22	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B23	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4069 0B24	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B25	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B26	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B27	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
4069 0B30	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4069 0B31	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4069 0B32	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
4069 0B33	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4069 0B34	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4069 0B35	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4069 0B36	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
4069 0B37	Memory tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

4069 0BF0	Memory tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

4069 0BF1	Memory tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU

4069 0BF2	Memory tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q3
		   b. U1.18-P1-H1/Q4
		2. Replace the RIO book, Location: U1.18-P1-H1

4069 0BF3	Memory tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q1
		   b. U1.18-P1-H1/Q2
		2. Replace the RIO book, Location: U1.18-P1-H1

4069 0BF4	Memory tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q7
		   b. U1.18-P1-H3/Q8
		2. Replace the RIO book, Location: U1.18-P1-H3

4069 0BF5	Memory tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q5
		   b. U1.18-P1-H3/Q6
		2. Replace the RIO book, Location: U1.18-P1-H3

4069 0BF6	Memory tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q5
		   b. U1.18-P1-H4/Q6
		2. Replace the RIO book, Location: U1.18-P1-H4

4069 0BF7	Memory tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q7
		   b. U1.18-P1-H4/Q8
		2. Replace the RIO book, Location: U1.18-P1-H4

4069 0BF8	Memory tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q7
		   b. U1.18-P1-H1/Q8
		2. Replace the RIO book, Location: U1.18-P1-H1

Error Code	Description	Action/ Possible Failing FRU

4069 0BF9	Memory tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book, Location: U1.18-P1-H1

4069 0BFA	Memory tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book, Location: U1.18-P1-H3

4069 0BFB	Memory tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book, Location: U1.18-P1-H3

4069 0BFC	Memory tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book, Location: U1.18-P1-H4.

4069 0BFD	Memory tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book, Location: U1.18-P1-H4

4069 0C03	Memory tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
4069 0C09	Memory tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
4069 0C0A	Memory tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
4069 0C10	Memory tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
4069 0C11	Memory tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
4069 0C12	Memory tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
4069 0C13	Memory tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
4069 0CA5	Memory tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.

Error Code	Description	Action/ Possible Failing FRU
4069 0CA6	Memory tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
4069 0CA9	Memory tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
4069 0D00	Memory tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
4069 0D01	Memory tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
4069 0D02	Memory tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
4069 0D03	Memory tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
4069 0D04	Memory tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
4069 0D05	Memory tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
4069 0D06	Memory tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1
4069 0D07	Memory tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
4069 0D08	Memory tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
4069 0D09	Memory tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
4069 0D0A	Memory tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
4069 0D0B	Memory tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
4069 0D0C	Memory tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
4069 0D0D	Memory tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
4069 0D0E	Memory tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
4069 0D0F	Memory tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
4069 0EA0	Memory tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
4069 0EA1	Memory tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
4069 0EA2	Memory tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
4069 0EA4	Memory tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
4069 0EAF	Memory tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
4069 0EB0	Memory tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
4069 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
4069 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

4069 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341.
		2. Examine the service processor error log.
		  • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code.
		  • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.

4069 0EE1	Memory tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
4069 0EE2	Memory tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
4069 0EE5	Memory tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
406A 0001	Self tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0002	Self tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0003	Self tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406A 0004	Self tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406A 0005	Self tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406A 0006	Self tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406A 0007	Self tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as "new defective".) 2. Primary I/O book Location: U1.18-P1-H2
406A 000A	Self tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406A 000B	Self tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 000C	Self tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 000D	Self tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0010	Self tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
406A 0011	Self tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
406A 0012	Self tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
406A 0013	Self tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
406A 0014	Self tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
406A 0015	Self tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
406A 0016	Self tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
406A 0017	Self tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
406A 00B0	Self tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406A 00B1	Self tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406A 00B3	Self tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406A 00B4	Self tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406A 00B5	Self tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406A 00B6	Self tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6

Error Code	Description	Action/ Possible Failing FRU
406A 00B7	Self tests detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406A 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406A 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406A 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406A 0B00	Self-tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406A 0B01	Self-tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406A 0B02	Self-tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406A 0B03	Self-tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406A 0B10	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B11	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B12	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406A 0B13	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B14	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B15	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B16	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B17	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406A 0B20	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406A 0B21	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406A 0B22	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406A 0B23	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406A 0B24	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406A 0B25	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406A 0B26	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406A 0B27	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406A 0B30	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406A 0B31	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406A 0B32	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406A 0B33	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406A 0B34	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406A 0B35	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406A 0B36	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406A 0B37	Self-tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

406A 0BF0	Self-tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406A 0BF1	Self-tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406A 0BF2	Self-tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q3
		  b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406A 0BF3	Self-tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q1
		  b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406A 0BF4	Self-tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q7
		  b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU
406A 0BF5	Self-tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q5 b. U1.18-P1-H3/Q6 2. Replace the RIO book, Location: U1.18-P1-H3
406A 0BF6	Self-tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H4/Q5 b. U1.18-P1-H4/Q6 2. Replace the RIO book, Location: U1.18-P1-H4
406A 0BF7	Self-tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H4/Q7 b. U1.18-P1-H4/Q8 2. Replace the RIO book, Location: U1.18-P1-H4
406A 0BF8	Self-tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H1/Q7 b. U1.18-P1-H1/Q8 2. Replace the RIO book, Location: U1.18-P1-H1
406A 0BF9	Self-tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H1/Q5 b. U1.18-P1-H1/Q6 2. Replace the RIO book, Location: U1.18-P1-H1
406A 0BFA	Self-tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q3 b. U1.18-P1-H3/Q4 2. Replace the RIO book, Location: U1.18-P1-H3
406A 0BFB	Self-tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H3/Q1 b. U1.18-P1-H3/Q2 2. Replace the RIO book, Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

406A 0BFC	Self-tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		    a. U1.18-P1-H4/Q1
		    b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		    Location: U1.18-P1-H4.

406A 0BFD	Self-tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		    a. U1.18-P1-H4/Q3
		    b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		    Location: U1.18-P1-H4

406A 0C03	Self-tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
406A 0C09	Self-tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406A 0C0A	Self-tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406A 0C10	Self-tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
406A 0C11	Self-tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
406A 0C12	Self-tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
406A 0C13	Self-tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
406A 0CA5	Self-tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.
406A 0CA6	Self-tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
406A 0CA9	Self-tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
406A 0D00	Self-tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
406A 0D01	Self-tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
406A 0D02	Self-tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
406A 0D03	Self-tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
406A 0D04	Self-tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
406A 0D05	Self-tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
406A 0D06	Self-tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
406A 0D07	Self-tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
406A 0D08	Self-tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
406A 0D09	Self-tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
406A 0D0A	Self-tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
406A 0D0B	Self-tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
406A 0D0C	Self-tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
406A 0D0D	Self-tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
406A 0D0E	Self-tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
406A 0D0F	Self-tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1
406A 0EA0	Self-tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
406A 0EA1	Self-tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
406A 0EA2	Self-tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
406A 0EA4	Self-tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
406A 0EAF	Self-tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
406A 0EB0	Self-tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406A 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406A 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
406A 0EE1	Self-tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
406A 0EE2	Self-tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
406A 0EE5	Self-tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
406B 0001	Wire tests detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0002	Wire tests detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406B 0003	Wire tests detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406B 0004	Wire tests detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406B 0005	Wire tests detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406B 0006	Wire tests detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406B 0007	Wire tests detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as ″new defective″.) 2. Primary I/O book Location: U1.18-P1-H2
406B 000A	Wire tests detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 000B	Wire tests detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 000C	Wire tests detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 000D	Wire tests detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0010	Wire tests detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
406B 0011	Wire tests detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
406B 0012	Wire tests detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
406B 0013	Wire tests detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
406B 0014	Wire tests detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
406B 0015	Wire tests detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
406B 0016	Wire tests detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
406B 0017	Wire tests detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
406B 00B0	Wire tests detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406B 00B1	Wire tests detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406B 00B3	Wire tests detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406B 00B4	Wire tests detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406B 00B5	Wire tests detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406B 00B6	Wire tests detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406B 00B7	Wire tests detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406B 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406B 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406B 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406B 0B00	Wire tests detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406B 0B01	Wire tests detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406B 0B02	Wire tests detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406B 0B03	Wire tests detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406B 0B10	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B11	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B12	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B13	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B14	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B15	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406B 0B16	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B17	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406B 0B20	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B21	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B22	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B23	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406B 0B24	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B25	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B26	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B27	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406B 0B30	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406B 0B31	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406B 0B32	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406B 0B33	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406B 0B34	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406B 0B35	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406B 0B36	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406B 0B37	Wire tests detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

406B 0BF0	Wire tests detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406B 0BF1	Wire tests detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU

406B 0BF2	Wire tests detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q3
		  b. U1.18-P1-H1/Q4
		2. Replace the RIO book, Location: U1.18-P1-H1

406B 0BF3	Wire tests detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q1
		  b. U1.18-P1-H1/Q2
		2. Replace the RIO book, Location: U1.18-P1-H1

406B 0BF4	Wire tests detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q7
		  b. U1.18-P1-H3/Q8
		2. Replace the RIO book, Location: U1.18-P1-H3

406B 0BF5	Wire tests detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q5
		  b. U1.18-P1-H3/Q6
		2. Replace the RIO book, Location: U1.18-P1-H3

406B 0BF6	Wire tests detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q5
		  b. U1.18-P1-H4/Q6
		2. Replace the RIO book, Location: U1.18-P1-H4

406B 0BF7	Wire tests detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q7
		  b. U1.18-P1-H4/Q8
		2. Replace the RIO book, Location: U1.18-P1-H4

406B 0BF8	Wire tests detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q7
		  b. U1.18-P1-H1/Q8
		2. Replace the RIO book, Location: U1.18-P1-H1

Error Code	Description	Action/ Possible Failing FRU

406B 0BF9	Wire tests detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

406B 0BFA	Wire tests detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

406B 0BFB	Wire tests detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

406B 0BFC	Wire tests detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H4.

406B 0BFD	Wire tests detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

406B 0C03	Wire tests detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
406B 0C09	Wire tests detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406B 0C0A	Wire tests detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406B 0C10	Wire tests detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
406B 0C11	Wire tests detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
406B 0C12	Wire tests detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
406B 0C13	Wire tests detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
406B 0CA5	Wire tests detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.

Error Code	Description	Action/ Possible Failing FRU
406B 0CA6	Wire tests detected no usable main storage	Reboot the system in slow mode to isolate the failure.
406B 0CA9	Wire tests detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
406B 0D00	Wire tests detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
406B 0D01	Wire tests detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
406B 0D02	Wire tests detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
406B 0D03	Wire tests detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
406B 0D04	Wire tests detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
406B 0D05	Wire tests detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
406B 0D06	Wire tests detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1
406B 0D07	Wire tests detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
406B 0D08	Wire tests detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
406B 0D09	Wire tests detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
406B 0D0A	Wire tests detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
406B 0D0B	Wire tests detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
406B 0D0C	Wire tests detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
406B 0D0D	Wire tests detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
406B 0D0E	Wire tests detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
406B 0D0F	Wire tests detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
406B 0EA0	Wire tests detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
406B 0EA1	Wire tests detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
406B 0EA2	Wire tests detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
406B 0EA4	Wire tests detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
406B 0EAF	Wire tests detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
406B 0EB0	Wire tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406B 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406B 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
406B 0EE1	Wire tests detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
406B 0EE2	Wire tests detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
406B 0EE5	Wire tests detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
406C 0001	IPL detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0002	IPL detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0003	IPL detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406C 0004	IPL detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406C 0005	IPL detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406C 0006	IPL detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406C 0007	IPL detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as ″new defective″.) 2. Primary I/O book Location: U1.18-P1-H2
406C 000A	IPL detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406C 000B	IPL detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 000C	IPL detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 000D	IPL detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0010	IPL detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
406C 0011	IPL detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
406C 0012	IPL detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
406C 0013	IPL detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
406C 0014	IPL detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
406C 0015	IPL detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
406C 0016	IPL detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
406C 0017	IPL detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
406C 00B0	IPL detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406C 00B1	IPL detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406C 00B3	IPL detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406C 00B4	IPL detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406C 00B5	IPL detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406C 00B6	IPL detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6

Error Code	Description	Action/ Possible Failing FRU
406C 00B7	IPL detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406C 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406C 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406C 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406C 0B00	IPL detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406C 0B01	IPL detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406C 0B02	IPL detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406C 0B03	IPL detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406C 0B10	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B11	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B12	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406C 0B13	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B14	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B15	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B16	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B17	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406C 0B20	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406C 0B21	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406C 0B22	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406C 0B23	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406C 0B24	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406C 0B25	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406C 0B26	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406C 0B27	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406C 0B30	IPL detected fault in I/O book	I/O book (slot 3 RIO port 0) Location: U1.18-P1-H4/Q1 1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406C 0B31	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406C 0B32	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406C 0B33	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406C 0B34	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406C 0B35	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406C 0B36	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406C 0B37	IPL detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

406C 0BF0	IPL detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406C 0BF1	IPL detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406C 0BF2	IPL detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q3
		  b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406C 0BF3	IPL detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q1
		  b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406C 0BF4	IPL detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q7
		  b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

406C 0BF5	IPL detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q5
		  b. U1.18-P1-H3/Q6
		2. Replace the RIO book, Location: U1.18-P1-H3

406C 0BF6	IPL detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q5
		  b. U1.18-P1-H4/Q6
		2. Replace the RIO book, Location: U1.18-P1-H4

406C 0BF7	IPL detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q7
		  b. U1.18-P1-H4/Q8
		2. Replace the RIO book, Location: U1.18-P1-H4

406C 0BF8	IPL detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q7
		  b. U1.18-P1-H1/Q8
		2. Replace the RIO book, Location: U1.18-P1-H1

406C 0BF9	IPL detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q5
		  b. U1.18-P1-H1/Q6
		2. Replace the RIO book, Location: U1.18-P1-H1

406C 0BFA	IPL detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q3
		  b. U1.18-P1-H3/Q4
		2. Replace the RIO book, Location: U1.18-P1-H3

406C 0BFB	IPL detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q1
		  b. U1.18-P1-H3/Q2
		2. Replace the RIO book, Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

406C 0BFC	IPL detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		    a. U1.18-P1-H4/Q1
		    b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		    Location: U1.18-P1-H4.

406C 0BFD	IPL detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		    a. U1.18-P1-H4/Q3
		    b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		    Location: U1.18-P1-H4

406C 0C03	IPL detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
406C 0C09	IPL detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406C 0C0A	IPL detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406C 0C10	IPL detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
406C 0C11	IPL detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
406C 0C12	IPL detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
406C 0C13	IPL detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
406C 0CA5	IPL detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.
406C 0CA6	IPL detected no usable main storage	Reboot the system in slow mode to isolate the failure.
406C 0CA9	IPL detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
406C 0D00	IPL detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
406C 0D01	IPL detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
406C 0D02	IPL detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
406C 0D03	IPL detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
406C 0D04	IPL detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
406C 0D05	IPL detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
406C 0D06	IPL detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
406C 0D07	IPL detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
406C 0D08	IPL detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
406C 0D09	IPL detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
406C 0D0A	IPL detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
406C 0D0B	IPL detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
406C 0D0C	IPL detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
406C 0D0D	IPL detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
406C 0D0E	IPL detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
406C 0D0F	IPL detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1
406C 0EA0	IPL detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
406C 0EA1	IPL detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
406C 0EA2	IPL detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
406C 0EA4	IPL detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
406C 0EAF	IPL detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
406C 0EB0	IPL tests detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406C 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406C 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
406C 0EE1	IPL detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
406C 0EE2	IPL detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
406C 0EE5	IPL detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
406D 0001	Attention handler detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0002	Attention handler detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406D 0003	Attention handler detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406D 0004	Attention handler detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406D 0005	Attention handler detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406D 0006	Attention handler detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406D 0007	Attention handler detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as ″new defective″.) 2. Primary I/O book Location: U1.18-P1-H2
406D 000A	Attention handler detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 000B	Attention handler detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 000C	Attention handler detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 000D	Attention handler detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0010	Attention handler detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
406D 0011	Attention handler detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
406D 0012	Attention handler detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
406D 0013	Attention handler detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
406D 0014	Attention handler detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
406D 0015	Attention handler detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
406D 0016	Attention handler detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
406D 0017	Attention handler detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
406D 00B0	Attention handler detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406D 00B1	Attention handler detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406D 00B3	Attention handler detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406D 00B4	Attention handler detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406D 00B5	Attention handler detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406D 00B6	Attention handler detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406D 00B7	Attention handler detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406D 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406D 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406D 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware.

If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.

If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following:
1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.)
2. Boot the AIX diagnostic CD-ROM.
3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected.

If errors are reported against the hardware, follow the actions for the error code or SRN. |
| 406D 0B00 | Attention handler detected fault in I/O book (slot 0 RIO port 0) | 1. Check for system firmware updates.
2. Check the I/O cabling between the primary I/O book and the I/O subsystems.
3. Primary I/O book
   Location: U1.18-P1-H2
4. Call service support. |
| 406D 0B01 | Attention handler detected fault in I/O book (slot 0 RIO port 1) | 1. Check for system firmware updates.
2. Check the I/O cabling between the primary I/O book and the I/O subsystems.
3. Primary I/O book
   Location: U1.18-P1-H2
4. Call service support. |
| 406D 0B02 | Attention handler detected fault in I/O book (slot 0 RIO port 2) | 1. Check for system firmware updates.
2. Check the I/O cabling between the primary I/O book and the I/O subsystems.
3. Primary I/O book
   Location: U1.18-P1-H2
4. Call service support. |
| 406D 0B03 | Attention handler detected fault in I/O book (slot 0 RIO port 3) | 1. Check for system firmware updates.
2. Check the I/O cabling between the primary I/O book and the I/O subsystems.
3. Primary I/O book
   Location: U1.18-P1-H2
4. Call service support. |

Error Code	Description	Action/ Possible Failing FRU
406D 0B10	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B11	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B12	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B13	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B14	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B15	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406D 0B16	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B17	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406D 0B20	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B21	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B22	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B23	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406D 0B24	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B25	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B26	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B27	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406D 0B30	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406D 0B31	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406D 0B32	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406D 0B33	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406D 0B34	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406D 0B35	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406D 0B36	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406D 0B37	Attention handler detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

406D 0BF0	Attention handler detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		   Location: U1.18-P1-H2

406D 0BF1	Attention handler detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		   Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU

406D 0BF2	Attention handler detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q3
		   b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

406D 0BF3	Attention handler detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q1
		   b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

406D 0BF4	Attention handler detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q7
		   b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

406D 0BF5	Attention handler detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q5
		   b. U1.18-P1-H3/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

406D 0BF6	Attention handler detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q5
		   b. U1.18-P1-H4/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

406D 0BF7	Attention handler detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q7
		   b. U1.18-P1-H4/Q8
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

406D 0BF8	Attention handler detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q7
		   b. U1.18-P1-H1/Q8
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

Error Code	Description	Action/ Possible Failing FRU

406D 0BF9	Attention handler detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book, Location: U1.18-P1-H1

406D 0BFA	Attention handler detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book, Location: U1.18-P1-H3

406D 0BFB	Attention handler detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book, Location: U1.18-P1-H3

406D 0BFC	Attention handler detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book, Location: U1.18-P1-H4.

406D 0BFD	Attention handler detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book, Location: U1.18-P1-H4

406D 0C03	Attention handler detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
406D 0C09	Attention handler detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406D 0C0A	Attention handler detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406D 0C10	Attention handler detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
406D 0C11	Attention handler detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
406D 0C12	Attention handler detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
406D 0C13	Attention handler detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
406D 0CA5	Attention handler detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.

Error Code	Description	Action/ Possible Failing FRU
406D 0CA6	Attention handler detected no usable main storage	Reboot the system in slow mode to isolate the failure.
406D 0CA9	Attention handler detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
406D 0D00	Attention handler detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
406D 0D01	Attention handler detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
406D 0D02	Attention handler detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
406D 0D03	Attention handler detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
406D 0D04	Attention handler detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
406D 0D05	Attention handler detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
406D 0D06	Attention handler detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1
406D 0D07	Attention handler detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
406D 0D08	Attention handler detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
406D 0D09	Attention handler detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
406D 0D0A	Attention handler detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
406D 0D0B	Attention handler detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
406D 0D0C	Attention handler detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
406D 0D0D	Attention handler detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
406D 0D0E	Attention handler detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
406D 0D0F	Attention handler detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
406D 0EA0	Attention handler detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
406D 0EA1	Attention handler detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
406D 0EA2	Attention handler detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
406D 0EA4	Attention handler detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
406D 0EAF	Attention handler detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
406D 0EB0	Attention handler detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406D 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406D 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
406D 0EE1	Attention handler detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
406D 0EE2	Attention handler detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
406D 0EE5	Attention handler detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
406E 0001	Scan control routineIPL detecteds detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0002	Scan control routines detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0003	Scan control routines detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406E 0004	Scan control routines detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406E 0005	Scan control routines detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406E 0006	Scan control routines detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406E 0007	Scan control routines detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as ″new defective″.) 2. Primary I/O book Location: U1.18-P1-H2
406E 000A	Scan control routines detected fault in primary I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406E 000B	Scan control routines detected fault in secondary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 000C	Scan control routines detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 000D	Scan control routines detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0010	Scan control routines detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
406E 0011	Scan control routines detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
406E 0012	Scan control routines detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
406E 0013	Scan control routines detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
406E 0014	Scan control routines detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
406E 0015	Scan control routines detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
406E 0016	Scan control routines detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
406E 0017	Scan control routines detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
406E 00B0	Scan control routines detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406E 00B1	Scan control routines detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406E 00B3	Scan control routines detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406E 00B4	Scan control routines detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406E 00B5	Scan control routines detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406E 00B6	Scan control routines detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6

Error Code	Description	Action/ Possible Failing FRU
406E 00B7	Scan control routines detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406E 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406E 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406E 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406E 0B00	Scan control routines detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406E 0B01	Scan control routines detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406E 0B02	Scan control routines detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406E 0B03	Scan control routines detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406E 0B10	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B11	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B12	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406E 0B13	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B14	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B15	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B16	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B17	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406E 0B20	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406E 0B21	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406E 0B22	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406E 0B23	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406E 0B24	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406E 0B25	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406E 0B26	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406E 0B27	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406E 0B30	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406E 0B31	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406E 0B32	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406E 0B33	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406E 0B34	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406E 0B35	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406E 0B36	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406E 0B37	Scan control routines detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

406E 0BF0	Scan control routines detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q1
		  b. U1.18-P1-H2/Q2
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406E 0BF1	Scan control routines detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H2/Q3
		  b. U1.18-P1-H2/Q4
		2. Replace the primary I/O book,
		Location: U1.18-P1-H2

406E 0BF2	Scan control routines detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q3
		  b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406E 0BF3	Scan control routines detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q1
		  b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406E 0BF4	Scan control routines detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q7
		  b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

406E 0BF5	Scan control routines detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q5
		   b. U1.18-P1-H3/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

406E 0BF6	Scan control routines detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q5
		   b. U1.18-P1-H4/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

406E 0BF7	Scan control routines detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q7
		   b. U1.18-P1-H4/Q8
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

406E 0BF8	Scan control routines detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q7
		   b. U1.18-P1-H1/Q8
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

406E 0BF9	Scan control routines detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book,
		   Location: U1.18-P1-H1

406E 0BFA	Scan control routines detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

406E 0BFB	Scan control routines detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H3

Error Code	Description	Action/ Possible Failing FRU

406E 0BFC	Scan control routines detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		    a. U1.18-P1-H4/Q1
		    b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		   Location: U1.18-P1-H4.

406E 0BFD	Scan control routines detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		    a. U1.18-P1-H4/Q3
		    b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		   Location: U1.18-P1-H4

406E 0C03	Scan control routines detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
406E 0C09	Scan control routines detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406E 0C0A	Scan control routines detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406E 0C10	Scan control routines detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
406E 0C11	Scan control routines detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
406E 0C12	Scan control routines detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
406E 0C13	Scan control routines detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
406E 0CA5	Scan control routines detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.
406E 0CA6	Scan control routines detected no usable main storage	Reboot the system in slow mode to isolate the failure.
406E 0CA9	Scan control routines detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
406E 0D00	Scan control routines detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
406E 0D01	Scan control routines detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
406E 0D02	Scan control routines detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
406E 0D03	Scan control routines detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
406E 0D04	Scan control routines detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
406E 0D05	Scan control routines detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
406E 0D06	Scan control routines detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
406E 0D07	Scan control routines detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
406E 0D08	Scan control routines detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
406E 0D09	Scan control routines detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
406E 0D0A	Scan control routines detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
406E 0D0B	Scan control routines detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
406E 0D0C	Scan control routines detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
406E 0D0D	Scan control routines detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
406E 0D0E	Scan control routines detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
406E 0D0F	Scan control routines detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1
406E 0EA0	Scan control routines detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
406E 0EA1	Scan control routines detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
406E 0EA2	Scan control routines detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
406E 0EA4	Scan control routines detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
406E 0EAF	Scan control routines detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
406E 0EB0	Scan control routines detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406E 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406E 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
406E 0EE1	Scan control routines detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
406E 0EE2	Scan control routines detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
406E 0EE5	Scan control routines detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
406F 0001	Error code generation/logging detected clock card assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0002	Error code generation/logging detected backplane assembly failure	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406F 0003	Error code generation/logging detected fault in MCM module 0	MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406F 0004	Error code generation/logging detected fault in MCM module 2	MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406F 0005	Error code generation/logging detected fault in MCM module 1	MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406F 0006	Error code generation/logging detected fault in MCM module 3	MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406F 0007	Error code generation/logging detected fault in L3 VPD card	1. L3 VPD card Location: U1.18-P1-H2.1 (Order the L3 cache module FRU to obtain a new L3 VPD card. Return the L3 cache module that was included in the FRU kit, and the failing L3 VPD card as ″new defective″.) 2. Primary I/O book Location: U1.18-P1-H2
406F 000A	Error code generation/logging detected fault in I/O book 1 (slot 0)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 000B	Error code generation/logging detected fault in primary I/O book (slot 1)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 000C	Error code generation/logging detected fault in I/O book 3 (slot 2)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 000D	Error code generation/logging detected fault in I/O book 4 (slot 3)	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0010	Error code generation/logging detected fault in Memory book (slot 0)	Memory book (slot 0) Location: U1.18-P1-M2
406F 0011	Error code generation/logging detected fault in Memory book (slot 1)	Memory book (slot 1) Location: U1.18-P1-M3
406F 0012	Error code generation/logging detected fault in Memory book (slot 2)	Memory book (slot 2) Location: U1.18-P1-M7
406F 0013	Error code generation/logging detected fault in Memory book (slot 3)	Memory book (slot 3) Location: U1.18-P1-M6
406F 0014	Error code generation/logging detected fault in Memory book (slot 4)	Memory book (slot 4) Location: U1.18-P1-M4
406F 0015	Error code generation/logging detected fault in Memory book (slot 5)	Memory book (slot 5) Location: U1.18-P1-M8
406F 0016	Error code generation/logging detected fault in Memory book (slot 6)	Memory book (slot 6) Location: U1.18-P1-M5
406F 0017	Error code generation/logging detected fault in Memory book (slot 7)	Memory book (slot 7) Location: U1.18-P1-M1
406F 00B0	Error code generation/logging detected possible problem with bus controller or CSP code	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406F 00B1	Error code generation/logging detected possible problem with bus controller	1. Check for system firmware updates. 2. Primary I/O book, Location: U1.18-P1-H2 3. Call service support.
406F 00B3	Error code generation/logging detected MCM 0/VPD problem	1. Check for system firmware updates. 2. MCM module 0 and VPD card Location: U1.18-P1-C1 and U1.18-P1-H2.3
406F 00B4	Error code generation/logging detected MCM 2/VPD problem	1. Check for system firmware updates. 2. MCM module 2 and VPD card Location: U1.18-P1-C4 and U1.18-P1-H2.4
406F 00B5	Error code generation/logging detected MCM 1/VPD problem	1. Check for system firmware updates. 2. MCM module 1 and VPD card Location: U1.18-P1-C3 and U1.18-P1-H2.5
406F 00B6	Error code generation/logging detected MCM 3/VPD problem	1. Check for system firmware updates. 2. MCM module 3 and VPD card Location: U1.18-P1-C2 and U1.18-P1-H2.6
406F 00B7	Error code generation/logging detected hardware problem in the processor subsystem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0A03	Reboot message (run-time array gard failure) for processor 0	Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406F 0A04	Reboot message (run-time array gard failure) for processor 2	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406F 0A05	Reboot message (run-time array gard failure) for processor 1	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.

Error Code	Description	Action/ Possible Failing FRU
406F 0A06	Reboot message (run-time array gard failure) for processor 3	Reboot the system in slow mode. Run diagnostics, then go to MAP 0235 in the .Array bit steering, which is a function in the firmware, may be able to correct this problem without replacing hardware. If AIX is available on the system, go to MAP 0235 in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. If Linux is the only operating system on the system, schedule deferred maintenance with the customer. When it is possible to reboot the system, do the following: 1. Using the service processor's system power control menu, disable fast mode boot. (Disabling fast mode automatically enables slow mode.) 2. Boot the AIX diagnostic CD-ROM. 3. Run diagnostics in problem determination mode. If no errors are recorded against any of the processors (devices with a resource name of proc*x*), array bit steering was successful and the problem has been corrected. If errors are reported against the hardware, follow the actions for the error code or SRN.
406F 0B00	Error code generation/logging detected fault in I/O book (slot 0 RIO port 0)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406F 0B01	Error code generation/logging detected fault in I/O book (slot 0 RIO port 1)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406F 0B02	Error code generation/logging detected fault in I/O book (slot 0 RIO port 2)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.
406F 0B03	Error code generation/logging detected fault in I/O book (slot 0 RIO port 3)	1. Check for system firmware updates. 2. Check the I/O cabling between the primary I/O book and the I/O subsystems. 3. Primary I/O book Location: U1.18-P1-H2 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406F 0B10	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B11	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B12	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B13	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B14	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B15	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406F 0B16	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B17	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H1 4. Call service support.
406F 0B20	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B21	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B22	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B23	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406F 0B24	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B25	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B26	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B27	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the secondary I/O book and the I/O subsystems. 3. Secondary I/O book Location: U1.18-P1-H3 4. Call service support.
406F 0B30	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0B31	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0B32	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.

Error Code	Description	Action/ Possible Failing FRU
406F 0B33	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0B34	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0B35	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0B36	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0B37	Error code generation/logging detected fault in I/O book	1. Check for system firmware updates. 2. Check the I/O cabling between the third I/O book and the I/O subsystems. 3. Third I/O book Location: U1.18-P1-H4 4. Call service support.
406F 0BF0	Error code generation/logging detected fault in I/O hub chip 0 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H2/Q1 b. U1.18-P1-H2/Q2 2. Replace the primary I/O book, Location: U1.18-P1-H2
406F 0BF1	Error code generation/logging detected fault in I/O hub chip 1 (port x)	1. Check the cabling on the following RIO ports: a. U1.18-P1-H2/Q3 b. U1.18-P1-H2/Q4 2. Replace the primary I/O book, Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU

406F 0BF2	Error code generation/logging detected fault in I/O hub chip 2 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q3
		  b. U1.18-P1-H1/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406F 0BF3	Error code generation/logging detected fault in I/O hub chip 3 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q1
		  b. U1.18-P1-H1/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406F 0BF4	Error code generation/logging detected fault in I/O hub chip 4 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q7
		  b. U1.18-P1-H3/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H3

406F 0BF5	Error code generation/logging detected fault in I/O hub chip 5 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H3/Q5
		  b. U1.18-P1-H3/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H3

406F 0BF6	Error code generation/logging detected fault in I/O hub chip 6 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q5
		  b. U1.18-P1-H4/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H4

406F 0BF7	Error code generation/logging detected fault in I/O hub chip 7 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H4/Q7
		  b. U1.18-P1-H4/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H4

406F 0BF8	Error code generation/logging detected fault in I/O hub chip 8 (port x)	1. Check the cabling on the following RIO ports:
		  a. U1.18-P1-H1/Q7
		  b. U1.18-P1-H1/Q8
		2. Replace the RIO book,
		Location: U1.18-P1-H1

Error Code	Description	Action/ Possible Failing FRU

406F 0BF9	Error code generation/logging detected fault in I/O hub chip 9 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H1/Q5
		   b. U1.18-P1-H1/Q6
		2. Replace the RIO book,
		Location: U1.18-P1-H1

406F 0BFA	Error code generation/logging detected fault in I/O hub chip 10 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q3
		   b. U1.18-P1-H3/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H3

406F 0BFB	Error code generation/logging detected fault in I/O hub chip 11 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H3/Q1
		   b. U1.18-P1-H3/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H3

406F 0BFC	Error code generation/logging detected fault in I/O hub chip 12 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q1
		   b. U1.18-P1-H4/Q2
		2. Replace the RIO book,
		Location: U1.18-P1-H4.

406F 0BFD	Error code generation/logging detected fault in I/O hub chip 13 (port x)	1. Check the cabling on the following RIO ports:
		   a. U1.18-P1-H4/Q3
		   b. U1.18-P1-H4/Q4
		2. Replace the RIO book,
		Location: U1.18-P1-H4

406F 0C03	Error code generation/logging detected fault in all MCMs	Go to "MAP 1543: MCM Module Problem Isolation" on page 278.
406F 0C09	Error code generation/logging detected fault in all memory books	Go to "MAP 1546: Memory Book Problem Isolation" on page 283.
406F 0C0A	Error code generation/logging detected fault in all I/O books	Go to "MAP 1547: I/O Book Problem Isolation" on page 285.
406F 0C10	Error code generation/logging detected mismatch between MCM 0 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C1 and U1.18-P1-H2.3
406F 0C11	Error code generation/logging detected mismatch between MCM 2 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C4 and U1.18-P1-H2.4
406F 0C12	Error code generation/logging detected mismatch between MCM 1 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C3 and U1.18-P1-H2.5
406F 0C13	Error code generation/logging detected mismatch between MCM 3 and VPD card	Plugging error with FRU kit Location: U1.18-P1-C2 and U1.18-P1-H2.6
406F 0CA5	Error code generation/logging detected invalid processor subsystem configuration	Verify that MCMs, memory books, and L3 modules are correctly configured.

Error Code	Description	Action/ Possible Failing FRU
406F 0CA6	Error code generation/logging detected no usable main storage	Reboot the system in slow mode to isolate the failure.
406F 0CA9	Error code generation/logging detected configuration error with processor memory	Reboot the system in slow mode to isolate the failure.
406F 0D00	Error code generation/logging detected fault in L3 cache module 0	L3 cache module 0 and L3 VPD card Location: U1.18-P1-C6 and U1.18-P1-H2.1
406F 0D01	Error code generation/logging detected fault in L3 cache module 1	L3 cache module 1 and L3 VPD card Location: U1.18-P1-C7 and U1.18-P1-H2.1
406F 0D02	Error code generation/logging detected fault in L3 cache module 2	L3 cache module 2 and L3 VPD card Location: U1.18-P1-C11 and U1.18-P1-H2.1
406F 0D03	Error code generation/logging detected fault in L3 cache module 3	L3 cache module 3 and L3 VPD card Location: U1.18-P1-C10 and U1.18-P1-H2.1
406F 0D04	Error code generation/logging detected fault in L3 cache module 4	L3 cache module 4 and L3 VPD card Location: U1.18-P1-C8 and U1.18-P1-H2.1
406F 0D05	Error code generation/logging detected fault in L3 cache module 5	L3 cache module 5 and L3 VPD card Location: U1.18-P1-C20 and U1.18-P1-H2.1
406F 0D06	Error code generation/logging detected fault in L3 cache module 6	L3 cache module 6 and L3 VPD card Location: U1.18-P1-C16 and U1.18-P1-H2.1
406F 0D07	Error code generation/logging detected fault in L3 cache module 7	L3 cache module 7 and L3 VPD card Location: U1.18-P1-C12 and U1.18-P1-H2.1
406F 0D08	Error code generation/logging detected fault in L3 cache module 8	L3 cache module 8 and L3 VPD card Location: U1.18-P1-C19 and U1.18-P1-H2.1
406F 0D09	Error code generation/logging detected fault in L3 cache module 9	L3 cache module 9 and L3 VPD card Location: U1.18-P1-C18 and U1.18-P1-H2.1
406F 0D0A	Error code generation/logging detected fault in L3 cache module 10	L3 cache module 10 and L3 VPD card Location: U1.18-P1-C14 and U1.18-P1-H2.1
406F 0D0B	Error code generation/logging detected fault in L3 cache module 11	L3 cache module 11 and L3 VPD card Location: U1.18-P1-C15 and U1.18-P1-H2.1
406F 0D0C	Error code generation/logging detected fault in L3 cache module 12	L3 cache module 12 and L3 VPD card Location: U1.18-P1-C17 and U1.18-P1-H2.1
406F 0D0D	Error code generation/logging detected fault in L3 cache module 13	L3 cache module 13 and L3 VPD card Location: U1.18-P1-C5 and U1.18-P1-H2.1
406F 0D0E	Error code generation/logging detected fault in L3 cache module 14	L3 cache module 14 and L3 VPD card Location: U1.18-P1-C9 and U1.18-P1-H2.1
406F 0D0F	Error code generation/logging detected fault in L3 cache module 15	L3 cache module 15 and L3 VPD card Location: U1.18-P1-C13 and U1.18-P1-H2.1

Error Code	Description	Action/ Possible Failing FRU
406F 0EA0	Error code generation/logging detected fault in MOPS service processor code	1. Access the service processor error log. Find the error log entry for the 406x 0EA0 error. Look for a hardware error of the form 450x yyyy, 460x yyyy, or 4B2x yyyy with a timestamp within a few minutes of the 406x 0EA0 error. Follow the actions for this hardware error. 2. If there is no hardware error in the service processor error log with a timestamp that is close to the 406x 0EA0 error, or following the actions for the hardware error does not resolve the problem, check for platform firmware updates. If an update is available, apply it. 3. If a platform firmware update is not available, or the update does not correct the problem, call service support.
406F 0EA1	Error code generation/logging detected fault in processor subsystem code on main processor	1. Check for operating system updates. 2. Call service support.
406F 0EA2	Error code generation/logging detected fault in PRD code on service processor	1. Check for system firmware updates. 2. Call service support.
406F 0EA4	Error code generation/logging detected fault in service processor code	1. Check for system firmware updates. 2. Call service support.
406F 0EAF	Error code generation/logging detected unknown service processor code and system type	1. Check for system firmware updates. 2. Call service support.
406F 0EB0	Error code generation/logging detected JTAG problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB1	Attention line 0 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB2	Attention line 1 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB3	Attention line 2 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB4	Attention line 3 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB5	Attention line 4 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB6	Attention line 5 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB7	Attention line 6 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB8	Attention line 7 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EB9	Attention line 8 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EBA	Attention line 9 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.

Error Code	Description	Action/ Possible Failing FRU
406F 0EBB	Attention line 10 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EBC	Attention line 11 stuck fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
406F 0EBF	Memory error	1. Reboot the system in slow mode to the SMS menus. See "Performing Slow Boot" on page 341. 2. Examine the service processor error log. • If a CEC subsystem error (a 4xxx yyyy error) occurred during the slow boot that calls out the memory, processors, L3 cache modules, or the primary I/O book, replace the part indicated by the location code. • If a CEC subsystem error (a 4xxx yyyy error) did not occur during the slow boot, look for a 4xxx yyyy error immediately preceding the 406x 0EBF error. Replace the part indicated by the location code associated with that error.
406F 0EE1	Error code generation/logging detected fault in service processor code (invalid MRU to mapping)	1. Check for system firmware updates. 2. Call service support.
406F 0EE2	Error code generation/logging detected fault in service processor firmware fault	1. Check for system firmware updates. 2. Call service support.
406F 0EE5	Error code generation/logging detected firmware error; no callout available	1. Check for system firmware updates. 2. Call service support.
4503 302A	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 302B	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 302C	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 302D	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 305A	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 305B	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 305C	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 305D	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 305E	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 305F	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 307A	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 307B	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 307C	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 307D	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 307E	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 308A	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 308B	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 308C	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 308D	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 308E	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 30BD	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 30C0	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 30C1	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU

4503 30C3	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following:
		
		1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus.
		
		   Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books.
		
		   If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved.
		
		   If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2.
		
		2. Replace the memory book specified by the location code.

4503 30C6	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following:
		
		1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus.
		
		   Look at the status of the books. If any of the books have a status of ″manually deconfigured″, reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books.
		
		   If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved.
		
		   If any of the books have a status of ″deconfigured by the system″, either before or after the boot to the SMS menus, go to step 2.
		
		2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 30C9	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4503 30CA	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4503 30CC	This error code indicates that the memory repeat gard function has deconfigured or partially deconfigured a memory book.	Do the following: 1. Go to the memory configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the books. If any of the books have a status of "manually deconfigured", reconfigure the books and boot the system in a full system partition to the SMS menus. Shut down the system and look again at the status of the books. If all of the books are still configured in the memory configuration/deconfiguration menu, the problem has been resolved. If any of the books have a status of "deconfigured by the system", either before or after the boot to the SMS menus, go to step 2. 2. Replace the memory book specified by the location code.
4504 248B	Memory subsystem and processor subsystem tests detected fault in operator panel	Operator panel Location: U1.17-L1
4504 25C0	Memory subsystem and processor subsystem tests detected fault in system backplane	System backplane Location: U1.18-P1
4504 25C1	Memory subsystem and processor subsystem tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4504 25D9	Memory subsystem and processor subsystem tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4504 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4504 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4504 25F1	Memory subsystem and processor subsystem tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4504 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4504 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4504 28B0	Memory subsystem and processor subsystem tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4504 28B1	Memory subsystem and processor subsystem tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4504 302A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4504 302B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282 to isolate the failing component.
4504 302C	Memory subsystem and processor subsystem tests detected fault in 32 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280 to isolate the failing component.
4504 302D	Memory subsystem and processor subsystem tests detected fault in 32 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282 to isolate the failing component.
4504 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 305C	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 305D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 305E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 305F	Memory subsystem and processor subsystem tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.

Error Code	Description	Action/ Possible Failing FRU
4504 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB Capacity Upgrade on Demand (CUoD) inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 30C0	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB Capacity Upgrade on Demand (CUoD) inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 30C1	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB Capacity Upgrade on Demand (CUoD) inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4504 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 30C9	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 30CA	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4504 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 248B	Memory subsystem and display alter tests detected fault in operator panel	Operator panel Location: U1.17-L1
4505 25C0	Memory subsystem and display alter tests detected fault in system backplane	System backplane Location: U1.18-P1
4505 25C1	Memory subsystem and display alter tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4505 25D9	Memory subsystem and display alter tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4505 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4505 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4505 25F1	Memory subsystem and display alter tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4505 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4505 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4505 28B0	Memory subsystem and display alter tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code

Error Code	Description	Action/ Possible Failing FRU
4505 28B1	Memory subsystem and display alter tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4505 302A	Memory subsystem and display alter tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4505 302B	Memory subsystem and display alter tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4505 302C	Memory subsystem and display alter tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4505 302D	Memory subsystem and display alter tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4505 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 305C	Memory subsystem and display alter tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 305D	Memory subsystem and display alter tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 305E	Memory subsystem and display alter tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 305F	Memory subsystem and display alter tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.

Error Code	Description	Action/ Possible Failing FRU
4505 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4505 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4505 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 248B	Memory subsystem and scan interface basic assurance tests detected fault in operator panel	Operator panel Location: U1.17-L1
4506 25C0	Memory subsystem and scan interface basic assurance tests detected fault in system backplane	System backplane Location: U1.18-P1
4506 25C1	Memory subsystem and scan interface basic assurance tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4506 25D9	Memory subsystem and scan interface basic assurance tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4506 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4506 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4506 25F1	Memory subsystem and scan interface basic assurance tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4506 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4506 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4506 28B0	Memory subsystem and scan interface basic assurance tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4506 28B1	Memory subsystem and scan interface basic assurance tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4506 302A	Memory subsystem and scan interface basic assurance tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4506 302B	Memory subsystem and scan interface basic assurance tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4506 302C	Memory subsystem and scan interface basic assurance tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4506 302D	Memory subsystem and scan interface basic assurance tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4506 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 305C	Memory subsystem and scan interface basic assurance tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 305D	Memory subsystem and scan interface basic assurance tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 305E	Memory subsystem and scan interface basic assurance tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 305F	Memory subsystem and scan interface basic assurance tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
45064 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
4506 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4506 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4506 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 248B	Memory subsystem and bus tests detected fault in operator panel	Operator panel Location: U1.17-L1
4507 25C0	Memory subsystem and bus tests detected fault in system backplane	System backplane Location: U1.18-P1
4507 25C1	Memory subsystem and bus tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4507 25D9	Memory subsystem and bus tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4507 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4507 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4507 25F1	Memory subsystem and bus tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4507 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4507 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4507 28B0	Memory subsystem and bus tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4507 28B1	Memory subsystem and bus tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4507 302A	Memory subsystem and bus tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4507 302B	Memory subsystem and bus tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4507 302C	Memory subsystem and bus tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4507 302D	Memory subsystem and bus tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4507 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
4507 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 305C	Memory subsystem and bus tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 305D	Memory subsystem and bus tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 305E	Memory subsystem and bus tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 305F	Memory subsystem and bus tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4507 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4507 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 248B	Memory subsystem and other bus tests detected fault in operator panel	Operator panel Location: U1.17-L1

Error Code	Description	Action/ Possible Failing FRU
4508 25C0	Memory subsystem and other bus tests detected fault in system backplane	System backplane Location: U1.18-P1
4508 25C1	Memory subsystem and other bus tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4508 25D9	Memory subsystem and other bus tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4508 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4508 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4508 25F1	Memory subsystem and other bus tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4508 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4508 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4508 28B0	Memory subsystem and other bus tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4508 28B1	Memory subsystem and other bus tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4508 302A	Memory subsystem and other bus tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4508 302B	Memory subsystem and other bus tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4508 302C	Memory subsystem and other bus tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4508 302D	Memory subsystem and other bus tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4508 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 305C	Memory subsystem and other bus tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 305D	Memory subsystem and other bus tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 305E	Memory subsystem and other bus tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 305F	Memory subsystem and other bus tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.

Error Code	Description	Action/ Possible Failing FRU
4508 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
45084 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4508 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4508 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 248B	Memory subsystem and memory tests detected fault in operator panel	Operator panel Location: U1.17-L1
4509 25C0	Memory subsystem and memory tests detected fault in system backplane	System backplane Location: U1.18-P1
4509 25C1	Memory subsystem and memory tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4509 25D9	Memory subsystem and memory tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4509 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4509 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.

Error Code	Description	Action/ Possible Failing FRU
4509 25F1	Memory subsystem and memory tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4509 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4509 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
4509 28B0	Memory subsystem and memory tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4509 28B1	Memory subsystem and memory tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4509 302A	Memory subsystem and memory tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4509 302B	Memory subsystem and memory tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4509 302C	Memory subsystem and memory tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4509 302D	Memory subsystem and memory tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4509 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 305C	Memory subsystem and memory tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 305D	Memory subsystem and memory tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 305E	Memory subsystem and memory tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 305F	Memory subsystem and memory tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
4509 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
4509 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4509 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 248B	Memory subsystem and self-tests detected fault in operator panel	Operator panel Location: U1.17-L1
450A 25C0	Memory subsystem and self-tests detected fault in system backplane	System backplane Location: U1.18-P1
450A 25C1	Memory subsystem and self-tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
450A 25D9	Memory subsystem and self-tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450A 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450A 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450A 25F1	Memory subsystem and self-tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450A 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450A 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450A 28B0	Memory subsystem and self-tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
450A 28B1	Memory subsystem and self-tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
450A 302A	Memory subsystem and self-tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
450A 302B	Memory subsystem and self-tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450A 302C	Memory subsystem and self-tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450A 302D	Memory subsystem and self-tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450A 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 305C	Memory subsystem and self-tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 305D	Memory subsystem and self-tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 305E	Memory subsystem and self-tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 305F	Memory subsystem and self-tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
450A 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450A 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450A 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 248B	Memory subsystem and wire tests detected fault in operator panel	Operator panel Location: U1.17-L1
450B 25C0	Memory subsystem and wire tests detected fault in system backplane	System backplane Location: U1.18-P1
450B 25C1	Memory subsystem and wire tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
450B 25D9	Memory subsystem and wire tests detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450B 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450B 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450B 25F1	Memory subsystem and wire tests detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450B 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450B 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450B 28B0	Memory subsystem and wire tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
450B 28B1	Memory subsystem and wire tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
450B 302A	Memory subsystem and wire tests detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450B 302B	Memory subsystem and wire tests detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450B 302C	Memory subsystem and wire tests detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450B 302D	Memory subsystem and wire tests detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450B 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
450B 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 305C	Memory subsystem and wire tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 305D	Memory subsystem and wire tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 305E	Memory subsystem and wire tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 305F	Memory subsystem and wire tests detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450B 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450B 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 248B	Memory subsystem and IPL detected fault in operator panel	Operator panel Location: U1.17-L1

Error Code	Description	Action/ Possible Failing FRU
450C 25C0	Memory subsystem and IPL detected fault in system backplane	System backplane Location: U1.18-P1
450C 25C1	Memory subsystem and IPL detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
450C 25D9	Memory subsystem and IPL detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450C 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450C 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450C 25F1	Memory subsystem and IPL detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450C 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450C 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450C 28B0	Memory subsystem and IPL detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
450C 28B1	Memory subsystem and IPL detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
450C 302A	Memory subsystem and IPL detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450C 302B	Memory subsystem and IPL detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450C 302C	Memory subsystem and IPL detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450C 302D	Memory subsystem and IPL detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450C 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 305C	Memory subsystem and IPL detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 305D	Memory subsystem and IPL detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 305E	Memory subsystem and IPL detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 305F	Memory subsystem and IPL detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
450C 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450C 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450C 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 248B	Memory subsystem and attention handler detected fault in operator panel	Operator panel Location: U1.17-L1
450D 25C0	Memory subsystem and attention handler detected fault in system backplane	System backplane Location: U1.18-P1
450D 25C1	Memory subsystem and attention handler detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
450D 25D9	Memory subsystem and attention handler detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450D 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450D 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450D 25F1	Memory subsystem and attention handler detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.

Error Code	Description	Action/ Possible Failing FRU
450D 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450D 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450D 28B0	Memory subsystem and attention handler detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
450D 28B1	Memory subsystem and attention handler detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
450D 302A	Memory subsystem and attention handler detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450D 302B	Memory subsystem and attention handler detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450D 302C	Memory subsystem and attention handler detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450D 302D	Memory subsystem and attention handler detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450D 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 305C	Memory subsystem and attention handler detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 305D	Memory subsystem and attention handler detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 305E	Memory subsystem and attention handler detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 305F	Memory subsystem and attention handler detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
450D 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450D 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450D 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 248B	Memory subsystem and scan control routines detected fault in operator panel	Operator panel Location: U1.17-L1
450E 25C0	Memory subsystem and scan control routines detected fault in system backplane	System backplane Location: U1.18-P1
450E 25C1	Memory subsystem and scan control routines detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
450E 25D9	Memory subsystem and scan control routines detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450E 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450E 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450E 25F1	Memory subsystem and scan control routines detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450E 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450E 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450E 28B0	Memory subsystem and scan control routines detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
450E 28B1	Memory subsystem and scan control routines detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code

Error Code	Description	Action/ Possible Failing FRU
450E 302A	Memory subsystem and scan control routines detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450E 302B	Memory subsystem and scan control routines detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450E 302C	Memory subsystem and scan control routines detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450E 302D	Memory subsystem and scan control routines detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450E 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 305C	Memory subsystem and scan control routines detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 305D	Memory subsystem and scan control routines detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 305E	Memory subsystem and scan control routines detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 305F	Memory subsystem and scan control routines detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.

Error Code	Description	Action/ Possible Failing FRU
450E 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450E 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450E 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 248B	Memory subsystem and error code generation/logging detected fault in operator panel	Operator panel Location: U1.17-L1
450F 25C0	Memory subsystem and error code generation/logging detected fault in system backplane	System backplane Location: U1.18-P1
450F 25C1	Memory subsystem and error code generation/logging detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
450F 25D9	Memory subsystem and error code generation/logging detected fault in L3 VPD card used with 1.1 GHz MCM and 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450F 25E7	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450F 25E8	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450F 25F1	Memory subsystem and error code generation/logging detected fault in L3 VPD card used with 1.3 GHz MCM	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450F 25F9	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450F 269A	Fault in L3 VPD card used with 1.5 GHz and 1.7 GHz MCMs	Go to "MAP 1548: Memory and Processor Problem Isolation" on page 287.
450F 28B0	Memory subsystem and error code generation/logging detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
450F 28B1	Memory subsystem and error code generation/logging detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
450F 302A	Memory subsystem and error code generation/logging detected fault in 8 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450F 302B	Memory subsystem and error code generation/logging detected fault in 8 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
450F 302C	Memory subsystem and error code generation/logging detected fault in 32 GB memory book (inner)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450F 302D	Memory subsystem and error code generation/logging detected fault in 32 GB memory book (outer)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
450F 305A	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (inner)	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 305B	Memory subsystem and processor subsystem tests detected fault in 8 GB memory book (outer)	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 305C	Memory subsystem and error code generation/logging detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 305D	Memory subsystem and error code generation/logging detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 305E	Memory subsystem and error code generation/logging detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 305F	Memory subsystem and error code generation/logging detected fault in 16 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 307A	Memory subsystem and processor subsystem tests detected fault in 4 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 307B	Memory subsystem and processor subsystem tests detected fault in 8 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 307C	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 307D	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 307E	Memory subsystem and processor subsystem tests detected fault in 16 GB inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 308A	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 308B	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 308C	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 308D	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 308E	Memory subsystem and processor subsystem tests detected fault in 4 GB outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 30BD	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.

Error Code	Description	Action/ Possible Failing FRU
450F 30C3	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD inner memory book	Go to "MAP 1544: Inner L3 Module Problem Isolation" on page 280.
450F 30C6	Memory subsystem and processor subsystem tests detected fault in 8 GB or 16 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
450F 30CC	Memory subsystem and processor subsystem tests detected fault in 32 GB or 64 GB CUoD outer memory book	Go to "MAP 1545: Outer L3 Module Problem Isolation" on page 282.
4604 248B	I/O subsystem and processor subsystem tests detected fault in operator panel	Operator panel Location: U1.17-L1
4604 25C0	I/O subsystem and processor subsystem tests detected fault in system backplane	System backplane Location: U1.18-P1
4604 25C1	I/O subsystem and processor subsystem tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4604 2738	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4604 273C	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4604 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4604 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4604 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4604 28B0	I/O subsystem and processor subsystem tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4604 28B1	I/O subsystem and processor subsystem tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4604 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.

Error Code	Description	Action/ Possible Failing FRU
4604 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4604 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4604 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4605 248B	I/O subsystem and display alter tests detected fault in operator panel	Operator panel Location: U1.17-L1
4605 25C0	I/O subsystem and display alter tests detected fault in system backplane	System backplane Location: U1.18-P1
4605 25C1	I/O subsystem and display alter tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4605 2738	I/O subsystem and display alter tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4605 273C	I/O subsystem and display alter tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4605 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4605 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4605 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.

Error Code	Description	Action/ Possible Failing FRU
4605 28B0	I/O subsystem and display alter tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4605 28B1	I/O subsystem and display alter tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4605 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4605 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4605 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4605 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4606 248B	I/O subsystem and scan interface basic assurance tests detected fault in operator panel	Operator panel Location: U1.17-L1
4606 25C0	I/O subsystem and scan interface basic assurance tests detected fault in system backplane	System backplane Location: U1.18-P1
4606 25C1	I/O subsystem and scan interface basic assurance tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4606 2738	I/O subsystem and scan interface basic assurance tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4606 273C	I/O subsystem and scan interface basic assurance tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
4606 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4606 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4606 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4606 28B0	I/O subsystem and scan interface basic assurance tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4606 28B1	I/O subsystem and scan interface basic assurance tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4606 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4606 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4606 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4606 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4607 248B	I/O subsystem and bus tests detected fault in operator panel	Operator panel Location: U1.17-L1

Error Code	Description	Action/ Possible Failing FRU
4607 25C0	I/O subsystem and bus tests detected fault in system backplane	System backplane Location: U1.18-P1
4607 25C1	I/O subsystem and bus tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4607 2738	I/O subsystem and bus tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4607 273C	I/O subsystem and bus tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4607 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4607 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4607 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4607 28B0	I/O subsystem and bus tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4607 28B1	I/O subsystem and bus tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4607 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4607 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.

Error Code	Description	Action/ Possible Failing FRU
4607 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4607 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4608 248B	I/O subsystem and other bus tests detected fault in operator panel	Operator panel Location: U1.17-L1
4608 25C0	I/O subsystem and other bus tests detected fault in system backplane	System backplane Location: U1.18-P1
4608 25C1	I/O subsystem and other bus tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4608 2738	I/O subsystem and other bus tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4608 273C	I/O subsystem and other bus tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4608 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4608 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4608 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4608 28B0	I/O subsystem and other bus tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4608 28B1	I/O subsystem and other bus tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code

Error Code	Description	Action/ Possible Failing FRU
4608 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4608 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4608 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4608 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4609 248B	I/O subsystem and memory tests detected fault in operator panel	Operator panel Location: U1.17-L1
4609 25C0	I/O subsystem and memory tests detected fault in system backplane	System backplane Location: U1.18-P1
4609 25C1	I/O subsystem and memory tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4609 2738	I/O subsystem and memory tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4609 273C	I/O subsystem and memory tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4609 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
4609 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.

Error Code	Description	Action/ Possible Failing FRU
4609 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
4609 28B0	I/O subsystem and memory tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4609 28B1	I/O subsystem and memory tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4609 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4609 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4609 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4609 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460A 248B	I/O subsystem and self-tests detected fault in operator panel	Operator panel Location: U1.17-L1
460A 25C0	I/O subsystem and self-tests detected fault in system backplane	System backplane Location: U1.18-P1
460A 25C1	I/O subsystem and self-tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
460A 2738	I/O subsystem and self-tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.

Error Code	Description	Action/ Possible Failing FRU
460A 273C	I/O subsystem and self-tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460A 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460A 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460A 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460A 28B0	I/O subsystem and self-tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
460A 28B1	I/O subsystem and self-tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
460A 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460A 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460A 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460A 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460B 248B	I/O subsystem and wire tests detected fault in operator panel	Operator panel Location: U1.17-L1

Error Code	Description	Action/ Possible Failing FRU
460B 25C0	I/O subsystem and wire tests detected fault in system backplane	System backplane Location: U1.18-P1
460B 25C1	I/O subsystem and wire tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
460B 2738	I/O subsystem and wire tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460B 273C	I/O subsystem and wire tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460B 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460B 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460B 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460B 28B0	I/O subsystem and wire tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
460B 28B1	I/O subsystem and wire tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
460B 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460B 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.

Error Code	Description	Action/ Possible Failing FRU
460B 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460B 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460C 248B	I/O subsystem and IPL detected fault in operator panel	Operator panel Location: U1.17-L1
460C 25C0	I/O subsystem and IPL detected fault in system backplane	System backplane Location: U1.18-P1
460C 25C1	I/O subsystem and IPL detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
460C 2738	I/O subsystem and IPL detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460C 273C	I/O subsystem and IPL detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460C 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460C 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460C 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460C 28B0	I/O subsystem and IPL detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
460C 28B1	I/O subsystem and IPL detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code

Error Code	Description	Action/ Possible Failing FRU
460C 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460C 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460C 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460C 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460D 248B	I/O subsystem and attention handler detected fault in operator panel	Operator panel Location: U1.17-L1
460D 25C0	I/O subsystem and attention handler detected fault in system backplane	System backplane Location: U1.18-P1
460D 25C1	I/O subsystem and attention handler detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
460D 2738	I/O subsystem and attention handler detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460D 273C	I/O subsystem and attention handler detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460D 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460D 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.

Error Code	Description	Action/ Possible Failing FRU
460D 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460D 28B0	I/O subsystem and attention handler detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
460D 28B1	I/O subsystem and attention handler detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
460D 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460D 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460D 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460D 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460E 248B	I/O subsystem and scan control routines detected fault in operator panel	Operator panel Location: U1.17-L1
460E 25C0	I/O subsystem and scan control routines detected fault in system backplane	System backplane Location: U1.18-P1
460E 25C1	I/O subsystem and scan control routines detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
460E 2738	I/O subsystem and scan control routines detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.

Error Code	Description	Action/ Possible Failing FRU
460E 273C	I/O subsystem and scan control routines detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460E 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460E 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460E 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460E 28B0	I/O subsystem and scan control routines detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
460E 28B1	I/O subsystem and scan control routines detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
460E 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460E 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460E 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460E 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.

Error Code	Description	Action/ Possible Failing FRU
460F 248B	I/O subsystem and error code generation/logging detected fault in operator panel	Operator panel Location: U1.17-L1
460F 25C0	I/O subsystem and error code generation/logging detected fault in system backplane	System backplane Location: U1.18-P1
460F 25C1	I/O subsystem and error code generation/logging detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
460F 2738	I/O subsystem and error code generation/logging detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460F 273C	I/O subsystem and error code generation/logging detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460F 273D	I/O subsystem and processor subsystem tests detected fault in primary I/O book - Slot 0	Primary I/O book - Slot 0 Location: U1.18-P1-H2
460F 2776	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460F 2806	I/O subsystem and processor subsystem tests detected fault in I/O book 1, 3, or 4	1. If word 13 is CFF1 xxxx, a configuration problem exists. Ensure that the number of MCMs is consistent with the number of I/O books. 2. Replace I/O book 1, 3, or 4 at location specified in error code.
460F 28B0	I/O subsystem and error code generation/logging detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
460F 28B1	I/O subsystem and error code generation/logging detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
460F 525E	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.

Error Code	Description	Action/ Possible Failing FRU
460F 525F	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460F 527A	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
460F 527C	CUoD capacity card fault	1. Verify that the system firmware is RH021114 or later. CUoD is not supported by the earlier firmware levels. 2. Replace the CUoD capacity card, location: U1.18-P1-H2.2, then ask the customer to reenter the CUoD activation keys.
4B23 258A	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of ″manually deconfigured,″ reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of ″deconfigured by the system,″ either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 25C7	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B23 25C8	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 25CF	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B23 25D3	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 25D5	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B23 25D7	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 25D8	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B23 25E5	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of "manually deconfigured," reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of "deconfigured by the system," either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 25E9	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of ″manually deconfigured,″ reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of ″deconfigured by the system,″ either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B23 526B	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of ″manually deconfigured,″ reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of ″deconfigured by the system,″ either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 526C	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of ″manually deconfigured,″ reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of ″deconfigured by the system,″ either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B23 526D	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of ″manually deconfigured,″ reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of ″deconfigured by the system,″ either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.

Error Code	Description	Action/ Possible Failing FRU
4B23 526E	The processor repeat gard function has deconfigured a processor.	Do the following: 1. Go to the processor configuration/deconfiguration menu, which is under the system information menu in the service processor menus. Look at the status of the processors. If any of the processors have a status of ″manually deconfigured,″ reconfigure the processor(s) and boot the system to the SMS menus. Power down the system; look again at the status of the processors. If all of the processors are still configured in the processor configuration/deconfiguration menu, the problem has been resolved. If any of the processors have a status of ″deconfigured by the system,″ either before or after the boot to the SMS menus, go to step 2 on page 580. 2. Replace the processor MCM (on which the deconfigured processor resides) specified by the location code.
4B24 248B	Processor subsystem detected fault in operator panel	Operator panel Location: U1.17-L1
4B24 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25C0	Processor subsystem detected fault in system backplane	System backplane Location: U1.18-P1
4B24 25C1	Processor subsystem detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B24 25C7	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25C8	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25D3	Processor subsystem detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25D5	Processor subsystem detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B24 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 28B0	Processor subsystem detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B24 28B1	Processor subsystem detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B24 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B24 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 248B	Processor subsystem and display alter tests detected fault in operator panel	Operator panel Location: U1.17-L1
4B25 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25C0	Processor subsystem and display alter tests detected fault in system backplane	System backplane Location: U1.18-P1
4B25 25C1	Processor subsystem and display alter tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B25 25C7	Processor subsystem and display alter tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25C8	Processor subsystem and display alter tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25D3	Processor subsystem and display alter tests detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25D5	Processor subsystem and display alter tests detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B25 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 28B0	Processor subsystem and display alter tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B25 28B1	Processor subsystem and display alter tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B25 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B25 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 248B	Processor subsystem and scan interface basic assurance tests detected fault in operator panel	Operator panel Location: U1.17-L1
4B26 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25C0	Processor subsystem and scan interface basic assurance tests detected fault in system backplane	System backplane Location: U1.18-P1
4B26 25C1	Processor subsystem and scan interface basic assurance tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B26 25C7	Processor subsystem and scan interface basic assurance tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25C8	Processor subsystem and scan interface basic assurance tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25D3	Processor subsystem and scan interface basic assurance tests detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B26 25D5	Processor subsystem and scan interface basic assurance tests detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 25E9	Processor subsystem detected fault in 84-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 28B0	Processor subsystem and scan interface basic assurance tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B26 28B1	Processor subsystem and scan interface basic assurance tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B26 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B26 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 248B	Processor subsystem and bus tests detected fault in operator panel	Operator panel Location: U1.17-L1
4B27 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25C0	Processor subsystem and bus tests detected fault in system backplane	System backplane Location: U1.18-P1
4B27 25C1	Processor subsystem and bus tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B27 25C7	Processor subsystem and bus tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25C8	Processor subsystem and bus tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B27 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25D3	Processor subsystem and bus tests detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25D5	Processor subsystem and bus tests detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 28B0	Processor subsystem and bus tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B27 28B1	Processor subsystem and bus tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B27 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B27 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 248B	Processor subsystem and other bus tests detected fault in operator panel	Operator panel Location: U1.17-L1
4B28 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25C0	Processor subsystem and other bus tests detected fault in system backplane	System backplane Location: U1.18-P1
4B28 25C1	Processor subsystem and other bus tests detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B28 25C7	Processor subsystem and other bus tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B28 25C8	Processor subsystem and other bus tests detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25D3	Processor subsystem and other bus tests detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25D5	Processor subsystem and other bus tests detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 28B0	Processor subsystem and other bus tests detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B28 28B1	Processor subsystem and other bus tests detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B28 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B28 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 248B	Processor subsystem and memory test detected fault in operator panel	Operator panel Location: U1.17-L1
4B29 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25C0	Processor subsystem and memory test detected fault in system backplane	System backplane Location: U1.18-P1
4B29 25C1	Processor subsystem and memory test detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5

Error Code	Description	Action/ Possible Failing FRU
4B29 25C7	Processor subsystem and memory test detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25C8	Processor subsystem and memory test detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25D3	Processor subsystem and memory test detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25D5	Processor subsystem and memory test detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 28B0	Processor subsystem and memory test detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B29 28B1	Processor subsystem and memory test detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B29 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B29 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 248B	Processor subsystem and self test detected fault in operator panel	Operator panel Location: U1.17-L1
4B2A 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B2A 25C0	Processor subsystem and self test detected fault in system backplane	System backplane Location: U1.18-P1
4B2A 25C1	Processor subsystem and self test detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B2A 25C7	Processor subsystem and self test detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25C8	Processor subsystem and self test detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25D3	Processor subsystem and self test detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25D5	Processor subsystem and self test detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 28B0	Processor subsystem and self test detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B2A 28B1	Processor subsystem and self test detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B2A 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2A 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 248B	Processor subsystem and wire test detected fault in operator panel	Operator panel Location: U1.17-L1

Error Code	Description	Action/ Possible Failing FRU
4B2B 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25C0	Processor subsystem and wire test detected fault in system backplane	System backplane Location: U1.18-P1
4B2B 25C1	Processor subsystem and wire test detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B2B 25C7	Processor subsystem and wire test detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25C8	Processor subsystem and wire test detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25D3	Processor subsystem and wire test detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25D5	Processor subsystem and wire test detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 28B0	Processor subsystem and wire test detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B2B 28B1	Processor subsystem and wire test detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B2B 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2B 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B2C 248B	Processor subsystem and IPL detected fault in operator panel	Operator panel Location: U1.17-L1
4B2C 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25C0	Processor subsystem and IPL detected fault in system backplane	System backplane Location: U1.18-P1
4B2C 25C1	Processor subsystem and IPL detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B2C 25C7	Processor subsystem and IPL detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25C8	Processor subsystem and IPL detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25D3	Processor subsystem and IPL detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25D5	Processor subsystem and IPL detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 28B0	Processor subsystem and IPL detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B2C 28B1	Processor subsystem and IPL detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B2C 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2C 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B2C 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 248B	Processor subsystem and attention handler detected fault in operator panel	Operator panel Location: U1.17-L1
4B2D 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25C0	Processor subsystem and attention handler detected fault in system backplane	System backplane Location: U1.18-P1
4B2D 25C1	Processor subsystem and attention handler detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B2D 25C7	Processor subsystem and attention handler detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25C8	Processor subsystem and attention handler detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25D3	Processor subsystem and attention handler detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25D5	Processor subsystem and attention handler detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 28B0	Processor subsystem and attention handler detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B2D 28B1	Processor subsystem and attention handler detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B2D 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B2D 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2D 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 248B	Processor subsystem and scan control routines detected fault in operator panel	Operator panel Location: U1.17-L1
4B2E 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25C0	Processor subsystem and scan control routines detected fault in system backplane	System backplane Location: U1.18-P1
4B2E 25C1	Processor subsystem and scan control routines detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B2E 25C7	Processor subsystem and scan control routines detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25C8	Processor subsystem and scan control routines detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25D3	Processor subsystem and scan control routines detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25D5	Processor subsystem and scan control routines detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 28B0	Processor subsystem and scan control routines detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B2E 28B1	Processor subsystem and scan control routines detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B2E 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B2E 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2E 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 248B	Processor subsystem and error code generation/logging detected fault in operator panel	Operator panel Location: U1.17-L1
4B2F 258A	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25C0	Processor subsystem and error code generation/logging detected fault in system backplane	System backplane Location: U1.18-P1
4B2F 25C1	Processor subsystem and error code generation/logging detected fault in 1.0 GHz clock card	Clock card Location: U1.18-P1-X5
4B2F 25C7	Processor subsystem and error code generation/logging detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25C8	Processor subsystem and error code generation/logging detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25CF	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25D3	Processor subsystem and error code generation/logging detected fault in 8-way processor MCM with VPD card	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25D5	Processor subsystem and error code generation/logging detected fault in 8-way processor MCM with VPD card (8-, 16-, or 24-way)	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25D7	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25D8	Fault in 4-way processor MCM detected	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25E5	Processor subsystem detected fault in 4-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 25E9	Processor subsystem detected fault in 8-way processor MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

Error Code	Description	Action/ Possible Failing FRU
4B2F 28B0	Processor subsystem and error code generation/logging detected fault in I/O subsystem PCI backplane	I/O subsystem PCI backplane at location specified in error code
4B2F 28B1	Processor subsystem and error code generation/logging detected fault in I/O subsystem DASD backplane	I/O subsystem DASD backplane at location specified in error code
4B2F 526B	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 526C	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 526D	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.
4B2F 526E	Fault detected in 4-way or 8-way CUoD MCM	Go to "MAP 1540: Problem Isolation Procedures" on page 252 to isolate the failing component.

System Firmware Update Messages

Error Code	Description	Action/ Possible Failing FRU
A1FD 0000	Firmware update recovery mode entered	Informational message
A1FD 0001	Service processor flash recovery	Insert Diskette #1
A1FD 0002	Service processor flash recovery	Insert Diskette #2
A1FD 0003	Service processor flash recovery	Insert Diskette #3
A1FD 0004	Service processor flash recovery	Insert Diskette #4
A1FD 000n	Service processor flash recovery	Insert Diskette #n

Capacity Upgrade on Demand (CUoD) Messages

Error Code	Description	Action/ Possible Failing FRU
A100 C2AC	Waiting for user to accept CUoD license agreement	User must click to accept license agreement. If the user declines, the IPL will be halted.

Scan Dump Messages

Error Code	Description	Action/ Possible Failing FRU
A100 3000	Successful completion of scan dump	Informational message; may or may not be seen during a scan log dump.
A1FF 3000	Scan dump has been disabled	Informational message; may or may not be seen during a scan log dump.

Common Firmware Error Codes

Attention: Follow the procedure defined in "Checkpoints and Error Codes Index" on page 344. If you replace FRUs or perform an action on an I/O subsystem and the problem is still not corrected, go to "MAP 1542: I/O Problem Isolation" on page 261 unless you were already directed to any MAP 154*x* by the error code. Otherwise call support if the action(s) for an error code do not resolve the problem.

Attention: If the error code that brought you to this chapter originated in the AIX error log, remember that an error may require an additional 15 minutes to be propagated to the AIX error log.

If you replace FRUs and the problem is corrected, go to "MAP 0410: Repair Checkout" in the *Diagnostic Information for Multiple Bus Systems*.

Error Code	Description	Action/ Possible Failing FRU
B006 1403	Missing service processor resource	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B006 1404	Service processor firmware fault	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B006 1405	Service processor firmware fault	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B006 1406	Service processor program error	1. Check for system firmware updates. 2. Check for operating system updates 3. Primary I/O book Location: U1.18-P1-H2
B006 1407	Service processor resource allocation problem	1. Check for system firmware updates. 2. Check for operating system updates 3. Primary I/O book Location: U1.18-P1-H2
B006 1408	Service processor program error	1. Check for system firmware updates. 2. Check for operating system updates 3. Primary I/O book Location: U1.18-P1-H2
B006 1409	Service processor program error	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B10F 1000	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1002	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1005	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1007	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1008	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 100E	Service processor boot flash damaged	Primary I/O book Location: U1.18-P1-H2
B10F 100F	Service processor base flash damaged	Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
B10F 1300	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1370	Service processor flash update failure	Primary I/O book Location: U1.18-P1-H2
B10F 1380	Service processor program failure	Primary I/O book Location: U1.18-P1-H2
B10F 1381	Service processor flash error	Primary I/O book Location: U1.18-P1-H2
B10F 1384	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1387	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1400	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1401	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B10F 1670	Service processor flash update failure	Primary I/O book Location: U1.18-P1-H2
B10F 1672	Service processor firmware update invalid	Call second level of support
B10F 1675	Service processor memory failure	Primary I/O book Location: U1.18-P1-H2
B10F 1681	Service processor firmware update invalid	Call second level of support
B10F 1682	Service processor firmware update invalid	Call second level of support
B10F 1683	Service processor firmware update invalid	Call second level of support
B1xx 0013	An attempt was made to flash (update) the firmware from AIX using the wrong image for this system. No flashing took place; the firmware level was not changed.	Retry the firmware update from AIX using the correct flash image.
B1xx 4600	Service processor failure	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4601	System processor failure	Reboot the system in slow mode to isolate the failure.

Error Code	Description	Action/ Possible Failing FRU

B1xx 4602	Hardware failure	1. Was this error code logged shortly after the system crashed?
		
		NO Go to 3.
		
		YES Go to 2
		
		2. Examine the service processor error log. Look for a 4xxx yyyy error that calls out FRU(s) in the CEC whose timestamp just precedes the B1xx 4602 error. If a 4xxx yyyy error occurred, replace the FRU indicated by the location code. If there is no 4xxx yyyy error whose timestamp just precedes the B1xx 4602 error, continue to 3.
		
		3.
		   a. Reboot the system in slow mode to the SMS menus. Refer to "Performing Slow Boot" on page 341.
		   b. Examine the service processor error logs. Look for a 4xxx yyyy error that occurred during the slow boot that calls out FRU(s) in the CEC.
		     • If a 4xxx yyyy error occurred during the slow boot, replace the FRU(s) indicated by the location code(s).
		     • If a 4xxx yyyy error did not occur during the slow boot, replace the primary I/O book, location: U1.18-P1-H2.

B1xx 4603	Service processor firmware damaged	1. Reflash system firmware. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4606	Firmware failure	1. Check for system firmware updates. 2. Operator panel Location: U1.17-L1
B1xx 4608	Service processor early termination	1. Reset the system by removing, then reapplying power to the processor subsystem. 2. Reflash system firmware. 3. Primary I/O book Location: U1.18-P1-H2
B1xx 460A	Time-of-day clock has been reset	1. Set time-of-day clock 2. Replace Primary I/O book Location: U1.18-P1-H2
B1xx 460B	NVRAM/Time-of-day battery	Replace battery Location: U1.18-P1-H2-V1
B1xx 4611	Service processor failure	1. Reboot the system in slow mode to isolate the problem in the processor subsystem. 2. Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
B1xx 4612	Service processor firmware failure	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4613	Service processor failure	Primary I/O book Location: U1.18-P1-H2
B1xx 4614	Service processor failure related to processor subsystem	Reboot the system in slow mode to isolate the problem in the processor subsystem.
B1xx 4620	Modem configuration failure	1. Check modem configuration files. 2. Check for system firmware updates. 3. Modem and modem cable. 4. Primary I/O book Location: U1.18-P1-H2
B1xx 4621	Modem disconnection failure	1. Check modem configuration files. 2. Check for system firmware updates. 3. Modem and modem cable. 4. Primary I/O book Location: U1.18-P1-H2
B1xx 4622	Service processor failure	1. Operator panel Location: U1.17-L1 2. Check for system firmware updates. 3. Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
B1xx 4633	System power control network (SPCN) failure	This error code may be informational, or it may indicate a failure in the SPCN firmware update. Before changing any parts, examine word 13 in the service processor error log entry, or bytes 68 and 69 in the AIX error log entry. For detailed instructions on finding word 13 in the service processor error log entry, or bytes 68 and 69 in the AIX error log entry, see error code B1xx 4699 on page 662.

All of the following values of word 13 (or bytes 68 and 69) indicate a failure of an SPCN firmware update:

A701
A702
A703
A704
A705
A706
A707

For these values of word 13, do the following:

1. Power off the system.

2. Collect the service processor error log data for the B1xx 4633 error. From the main service processor menu, enter 3 to access the System Information menu. Select option 3, **Service Processor Error Logs**.

3. Collect the SPCN trace data. From the main service processor menu, enter 3 to access the System Information menu. Select option 9, the **Power Control Network Utilities Menu**. Then select option 4, **Collect and Display the SPCN Trace Data**.

4. Power on the system. |

Error Code	Description	Action/ Possible Failing FRU

B1xx 4633 Cont'd		1. Wait 10 minutes after the system has reached the AIX prompt. Examine the AIX error log for new B1xx 4633 errors with the word 13 values (in bytes 68 and 69 in the error log entry). If there are no B1xx 4633 errors with matching time stamps, the SPCN down load was successful. If the download failed again (there is another B1xx 4633 error in the AIX error log with the correct time stamp), do the following:
		
		a. Power down the system.
		
		b. Collect the service processor error log data for the B1xx 4633 error (see 2 on page 657).
		
		c. Collect the SPCN trace data (see 3 on page 657).
		
		d. Contact service support. For all other values of word 13, or bytes 68 and 69, do the following:
		
		   1) Check for system firmware updates. Apply if available.
		
		   2) Call service support.

B1xx 4634	SPCN Loop Fault	1. Check SPCN cabling. 2. Go to "MAP 1542: I/O Problem Isolation" on page 261.
B1xx 4635	AC input was removed, then restored.	Informational message. Look at the service processor error log for additional error codes relating to loss of ac power to the system.
B1xx 4636	System is running on battery back-up power	Informational message.
B1xx 4643	Problem when turning on the identify LED of a FRU	1. Use the location code that was provided with the original error code to isolate and replace the failing device. 2. If a problem persists, go to "MAP 154A: I2C Bus Problem Isolation" on page 296.
B1xx 4644	I2C connection failure	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4645	I2C (non-processor) VPD system fault	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
B1xx 4646	Vital product data (VPD) acquisition failure	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4647	Machine type and model fields missing or invalid in system VPD	The machine type and model fields must be rewritten. Call service support.
B1xx 4648	Processor subsystem backplane VPD or power source problem	Go to "MAP 1540: Problem Isolation Procedures" on page 252.
B1xx 4650	System processor failure (all processors reset).	Reboot the system in slow mode to isolate the problem.
B1xx 4651	CPU GARD VPD on MCM 0	U1.18-P1-C1 and U1.18-P1-H2.3

Error Code	Description	Action/ Possible Failing FRU
B1xx 4652	CPU GARD VPD on MCM 1	U1.18-P1-C3 and U1.18-P1-H2.5
B1xx 4653	CPU GARD VPD on MCM 2	U1.18-P1-C4 and U1.18-P1-H2.4
B1xx 4654	CPU GARD VPD on MCM 3	U1.18-P1-C2 and U1.18-P1-H2.6
B1xx 4660	Memory subsystem failure (cannot isolate)	Reboot the system in slow mode to isolate the failure, then check the service processor error log for failing FRUs associated with this error code.
B1xx 4661	Memory book VPD failure	Reboot the system in slow mode to isolate the failure, then check the service processor error log for failing FRUs associated with this error code.
B1xx 4662	Memory book VPD failure	Reboot the system in slow mode to isolate the failure, then check the service processor error log for failing FRUs associated with this error code.
B1xx 4681	JTAG scan system (cabling)	1. Check JTAG cabling. 2. Call service support
B1xx 4682	Problem with VPD on operator panel	1. Replace the operator panel, Location: U1.17-L1 Do not swap the old VPD module onto the new op panel. Call service support for instructions on programming the new VPD module. 2. Call service support.
B1xx 4683	Capacity Upgrade on Demand (CUoD) card fault	1. Replace the CUoD capacity card, location: U1.18-P1-H2.2. See also "Capacity Upgrade on Demand (CUoD) VPD Module" on page 809.

Error Code	Description	Action/ Possible Failing FRU
B1xx 4690	Operating system surveillance time out (AIX to service processor interface failure)	1. This error code indicates that the operating system terminated early (which usually implies an operating system crash). This error code may appear in the service processor error log by itself. However, in the AIX error log, there should be another error which points to the cause of the operating system crash. Use the other error as the starting point for your service action. 2. The other possibility is that the operating system was not found during a prior boot attempt. To determine if this occurred, do the following: Look at the AIX error log entry containing B1xx4690. This will be a ″SCAN_ERROR_CHRP″ error with an identifier of BFEC0425. In the detail data, find the string ″B1xx4690″ (If present, it will be at byte 60 of the detail data.) Then go forward 8 bytes after the ″B1″ to byte 68 and look at bytes 68 and 69. If the values of bytes 68 and 69 are A2B0, this indicates that the firmware was unable to find a bootable device in the boot list that is set in the SMS menus. If the system is up, the boot list problem has been corrected and the B1xx 4690 can be treated as an informational message with no actions required. 3. Call service support.
B1xx 4691	System firmware surveillance interval exceeded (system firmware to service processor interface failure)	1. Check for system firmware updates. 2. Go to the service processor main menu and select System Information Menu, then select **Read Progress Indicators From Last System Boot**. Begin your repair action with the error code or checkpoint immediately preceding B1xx 4691. If a location code displays with the error code or checkpoint, replace the part at that location. If changing that part does not fix the problem, or no location code is specified, and you have an 8-character error code, go to the "Checkpoints and Error Codes Index" on page 344. If changing that part does not fix the problem, or no location code is specified, and you have a 4-character checkpoint, go to "Firmware Checkpoints" on page 313. 3. If the problem is not solved, call the second level of support.
B1xx 4692	Operator panel task interface failure	1. Check for system firmware updates. 2. Call service support
B1xx 4693	Service processor firmware failure	1. Check for system firmware updates. 2. Call service support

Error Code	Description	Action/ Possible Failing FRU
B1xx 4694	System processor firmware failure	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4695	System power control network (SPCN) to service processor interface failure	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 4696	System firmware interface failure	1. Check for system firmware updates. 2. Call service support.
B1xx 4698	Service processor firmware error This is usually an indication that the interposer plug count has not been set after an MES upgrade or FRU replacement of an MCM or L3 cache module. It can also indicate that the plug count values were not revalidated after the primary I/O book was replaced. In both cases, it is only an informational message. If the managed server is down, go to the service processor error log and find the error log entry containing B1xx 4698. Examine the first two bytes of word 13 of the detailed entry information. If the managed server is running, look at the AIX error log entry containing B1xx 4698. This will be a ″SCAN_ERROR_CHRP″ error with an identifier of BFE4C025. In the detail data, find the string ″B1xx 4698″ (if present, it will be at byte 60 of the detail data). Go forward 8 bytes after the ″B1″ to byte 68 and examine bytes 68 and 69. If the value is E10B or E10C, do the following: • If the primary I/O book was just replaced, go to the service processor menus and select ″System Information Menu,″ then select ″MCM/L3 Interposer Plug Count Menu.″ At the 0> prompt, enter 50 to commit the values and write them to the VPD. Fully exit the menu before powering on the system. • If an MCM or L3 cache module was just added or replaced, go to the service processor menu and select ″System Information Menu,″ then select ″MCM/L3 Interposer Plug Count Menu.″ Find the index number that corresponds to the module that was just added or replaced and enter the new plug count that was included in the FRU or MES kit. If the plug count is not included with the FRU, enter 7 as the new plug count (to account for the number of times the module was plugged during the manufacturing process). Fully exit the menu before powering on the system. For all other values of bytes 68 and 69, or the first two bytes of word 13, do the following: 1. Check for system firmware updates. 2. Reset the service processor by activating the pinhole reset switch on the operator panel. 3. Call service support.

Error Code	Description	Action/ Possible Failing FRU
B1xx 4699	Service processor firmware error This is usually an indication of a problem in the communication path between the HMC and the service processor. It may only be an informational message. If the managed server is down, go to the service processor error log and find the error log entry containing B1xx 4699. Examine the first two bytes of word 13 of the detailed entry information. If the managed server is running, examine the AIX error log entry containing B1xx 4699. This is a ″SCAN_ERROR_CHRP″ error with an identifier of BFE4C025. In the detail data, find the string ″B1xx 4699″. (If present, it will be at byte 60 of the detail data.) Go forward 8 bytes after the ″B1″ to byte 68 and examine bytes 68 and 69. If the system is running Linux, examine the Linux system log. The line(s) in the extended data that begin with <4>RTAS: Log Debug: 04″ contain the error code in the next 8 hex characters. (This error code is also known as word 11). Each 4 bytes after the error code in the Linux extended data is another word. The 4 bytes after the error code are word 12 and the next four bytes are word 13. An example of the Linux extended data, and finding words 11, 12, and 13, is shown in "MAP 1321: Quick Entry MAP for Systems with Service Focal Point" on page 122, "Step 1321-28" on page 126, and "Step 1321-29" on page 127.	

Perform the following actions based on the values of bytes 68 and 69 listed below from the AIX error log entry, or on the first two bytes of word 13 from the service processor error log entry:

9906: Software problem during firmware update from operating system. Actions:
   1. Check for a system firmware update that is later than the one that caused this error. Apply if available.
   2. Call service support.

9920: Error occurred during model upgrade from a 406/70 (7040 model 671) to a 406/90 (7040 model 681). Actions:
   1. Verify that the system being upgraded is a 406/70 (7040 model 671). This error will occur if the system has already been upgraded.
   2. The special model upgrade diskette might be damaged. Obtain another model upgrade diskette.
   3. The diskette drive in the media subsystem might be damaged. Replace it.
   4. Check for system firmware updates. Apply if available.
   5. Call service support.

A205: Machine type and model fields are not valid in the VPD module. Obtain a new operator panel. Do not swap the old VPD module onto the new operator panel. Call service support for instructions on how to write the machine type and model into the new VPD module.

A20B: Error requesting trace buffer for service processor.
   Actions:
   1. Reset the service processor, if possible.
   2. Check for system firmware updates. Apply the updates if they are available.

Error Code	Description	Action/ Possible Failing FRU
B1xx 4699 (Cont.)	**A218:** Unknown return code detected. **Actions:** Check for system firmware updates. Apply the updates if they are available. **A21A:** Error allocating an internal service processor. **Actions:** 1. Reset the service processor, if possible. 2. Check for system firmware updates. Apply the updates if they are available. **A800:** This indicates an HMC/service processor initialization failure. **Actions:** 1. Check for system firmware updates. 2. Replace the primary I/O book, location: U1.18-P1-H2. **A801:** This indicates an HMC wrap failure. **Actions:** Replace the primary I/O book, location: U1.18-P1-H2. **A806:** This indicates a loss of the surveillance heartbeat between the HMC and the service processor. **Actions:** 1. Make sure that the HMC is booted and operational. 2. Check the serial cables that go from the HMC to the primary I/O book, location: U1.18-P1-H2. If there are no other error codes or indications of a problem, the A806 (loss of surveillance heartbeat) was a temporary condition and has been resolved; the B1xx4699 code is then an informational message only. If the problem persists: 1. Check the serial cables that go from the HMC to the primary I/O book, location: U1.18-P1-H2. 2. Run diagnostics on the serial port on the HMC. 3. Run diagnostics on the serial ports on the service processor in the managed server. Values of A009 and A719 of bytes 68 and 69 in the AIX error log entry or the first two bytes of word 13 in the service processor error log entry are also informational entries: **A009:** The system received a power-off request at runtime from the HMC, or the white button on the operator panel was used to power down the system at runtime. **A719:** Primary power failed; the system switched to battery backup power. For all other values of bytes 68 and 69, or the first two bytes of word 13, do the following: 1. Check for system firmware updates. 2. Reset the service processor by activating the pinhole reset switch on the operator panel. 3. Call service support.	
B1xx 469A	System firmware interface	1. Check for system firmware updates. 2. Call service support.
B1xx 469B	Firmware to I/O interface	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 469C	Firmware to I/O interface	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2
B1xx 469D	Service processor firmware	1. Check for system firmware updates. 2. Primary I/O book Location: U1.18-P1-H2

Error Code	Description	Action/ Possible Failing FRU
B1xx 469E	Service processor firmware failure	1. Check for system firmware updates. 2. Reboot the system in slow mode to isolate a problem in the processor subsystem. 3. Primary I/O book Location: U1.18-P1-H2
B1xx 469F	Service processor failure	1. Check for system firmware updates. 2. Reboot the system in slow mode to isolate a problem in the processor subsystem. 3. Primary I/O book Location: U1.18-P1-H2
B1xx 8FF0	Informational message	No action required.
B1FD 0013	A firmware update has failed because the update image is invalid. The update was stopped before any changes were made to the currently installed firmware	Reset the service processor by activating the pinhole reset switch on the operator panel. Flash a valid firmware update image for the system type and model.
B1FD 0015	Too many firmware update diskettes were inserted (or the update image was faulty, or not the right image for the system)	1. Essure that the firmware update image is correct for the system type and model. 2. Replace the update diskettes with a new set of firmware update diskettes.
B1FD 0016	Firmware update diskette read error	1. The firmware diskette may be faulty. Try another diskette. 2. Diskette drive Location: U1.17- D1. 3. Primary I/O book Location: U1.18-P1-H2.
B1FD 001A	Service processor recovery mode update fault	Reset the service processor by activating the pinhole reset switch on the operator panel. Attempt to flash a valid firmware update image for the system type and model again.
B1FD 001E	Service processor recovery mode update fault	Wrong firmware update diskette. Insert the correct update diskette.
B1FD 001F	Firmware update diskette bad	Replace the update diskette.

HMC Surveillance Error Codes

The HMC surveillance error codes generated only by the HMC are listed in the following table.

Error Code	Description	Action/ Possible Failing FRU
B301 0001	HMC/partition surveillance fault	Contact service support.
B301 0002	HMC/partition surveillance fault	Verify the network between the HMC and the partition by pinging in both directions. If problems are found, correct them. Reboot the HMC.
B301 0012	HMC/partition surveillance fault	Contact service support.
B301 0013	HMC/partition surveillance fault	Contact service support.
B301 0019	HMC/partition surveillance fault	Contact service support.
B301 0020	HMC/partition surveillance fault	Contact service support.

Error Code	Description	Action/ Possible Failing FRU
B301 0023	HMC/partition surveillance fault	Contact service support.
B301 0025	HMC/partition surveillance fault	Contact service support.
B301 0026	HMC/partition surveillance fault	Contact service support.
B301 0027	HMC/partition surveillance fault	1. If short hostnames are being used for the HMC and the partitions, ensure that the short hostnames are set up correctly according to the instructions in "Using Network Adapters to Communicate with Partitions" in the *Hardware Management Console Operations Guide*. Correct any problems that are found, then verify that you can ping in both directions between the HMC and partitions. 2. If short hostnames are not being used, or the previous step does not correct the problem, contact service support.
B301 0029	HMC/partition surveillance fault	Contact service support.
B301 002B	HMC/partition surveillance fault	Contact service support.
B301 002C	HMC/partition surveillance fault	Contact service support.
B301 002D	HMC/partition surveillance fault	Contact service support.
B302 0001	HMC/partition surveillance fault	1. If short hostnames are being used for the HMC and the partitions, ensure that the short hostnames are set up correctly according to the instructions in "Using Network Adapters to Communicate with Partitions" in the *Hardware Management Console Operations Guide*. Correct any problems that are found, then verify that you can ping in both directions between the HMC and partitions. 2. If short hostnames are not being used, or the previous step does not correct the problem, contact service support.

Problem Determination-Generated Error Codes

Error Code	Description	Action/ Possible Failing FRU
M0BT 0000	The system hung during speaker POST. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
M0BT 0001	The system hung during "Starting Software...". This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
M0KB D000	The system hung during keyboard POST. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	1. Primary I/O book Location: U1.18-P1-H2 2. Keyboard
M0KB D001	The system did not respond to a keyboard entry. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Type 101 keyboard.
M0KB D002	The system did not respond to a keyboard entry. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Type 102 keyboard.
M0KB D003	The system did not respond to a keyboard entry. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Kanji-type keyboard.
M0ME M002	The system hung during memory POST. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
M0NE T000	The system hung during network POST. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
M0PS 0000	Power failure. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1520: Power" on page 139.
M0SC SI00	Unable to load diagnostics. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1542: I/O Problem Isolation" on page 261.
M0SC SI01	Unable to load diagnostics. This error code is generated by the customer performing "Problem Determination" as described in the *406/70*.	Go to "MAP 1542: I/O Problem Isolation" on page 261.

Hypervisor Dump Retrieval Procedure

This procedure defines the requirements and methods for retrieving a hypervisor dump file following a system crash. This procedure is applicable only if the managed system had been running as a partitioned system before it crashed.

This procedure requires the managed system to be rebooted as a partitioned system. Retrieval must then take place from an AIX partition.

Hypervisor Dump Indications

If the system operator panel displays error code 20D00997, 20D00998, or 20D00999, a system crash within the run-time firmware has occurred.

If error code 20D00997, 20D00998, or 20D00999 is in the service processor error log, a system crash within the run-time firmware has occurred. The following is an example of a detailed service processor error log entry with error code 20D00999:

```
05/29/2001 21:06:12    Operating System Terminated with Error String
Error code: 20D00999
Detail:   A2C1


SRC
--------------------------------------------------------------
word11: B1194690  word12: 04A0005D  word13: A2C1C0FA
word14: 00000000  word15: 00007701  word16: 00000008
word17: 00000000  word18: 00000000  word19: 00000000

20D00999
```

After a system crash has occurred, verify if a hypervisor dump has been collected, as described in the following section.

Retrieving the Hypervisor Dump file

After it has been determined that the managed system has crashed and a hypervisor dump exists, or if the user wants to test for an existing dump file, the managed system must be rebooted as a partitioned system. A partition or partitions running AIX must then be activated. After rebooting, any partition running AIX may be used to retrieve the dump file. Do the following:

1. Install the **devices.chrp_lpar.base.ras** fileset.

   The **devices.chrp_lpar.base.ras** AIX fileset must be installed and committed. To determine if the package has been previously installed, enter the following command on the AIX command line:

   ```
   lslpp -l | grep devices.chrp_lpar.base.ras
   ```

   If the output on the AIX console is similar to the following, the **devices.chrp_lpar.base.ras** fileset is already installed and no further action for step 1 is necessary:

   ```
   devices.chrp_lpar.base.ras   5.X.X.X COMMITTED CHRP LPAR RAS Support
   ```

   If no output is returned, the **devices.chrp_lpar.base** LPP must be installed from the AIX installation media by the customer or system administrator.

   After the fileset is installed, the dump file is ready to be retrieved.

2. Enter `fetchdbg -k` at the command prompt.

   This produces the following output:

   ```
   Retrieving Dump File ............Dump read successful
   ```

   This action results in a file being written into the **/tmp** directory named **dumpMMDDYY** where MM is the current month, DD is the current day, and YY is the current year. Forward the **/tmp/dumpMMDDYY** file to service support.

   If the following text displays on the AIX console, note the error and report it to service support:

   ```
   Retrieving Dump File
   Error performing dump read
   ```

Chapter 6. Using the Online and Standalone Diagnostics

The AIX diagnostics consist of online diagnostics and standalone diagnostics.

Attention: The AIX operating system must be installed in a partition in order to run online diagnostics on that partition. If the AIX operating system is not installed, use the standalone diagnostic procedures.

Online diagnostics, when they are installed, reside with AIX in the file system. They can be booted:
- In single user mode (referred to as *service mode*)
- To run in maintenance mode (referred to as *maintenance mode*)
- To run concurrently with other applications (referred to as *concurrent mode*)

Standalone diagnostics must be booted before they can be run. If booted, the diagnostics have no access to the AIX error log or the AIX configuration data.

Does the system have AIX diagnostics preinstalled?

Yes   If there is an HMC attached to the system, go to "Operating Considerations for Online and Standalone Diagnostics".

If an HMC is not attached to the system, go to "Running the Online Diagnostics with No HMC Attached" on page 672.

No   If there is an HMC attached to the system, go to "Loading the Standalone Diagnostics from CD-ROM Using an HMC" on page 674.

If an HMC is not attached to the system, go to "Running the Standalone Diagnostics with CD-ROM with No HMC Attached" on page 675.

If standalone diagnostics will be run from a NIM server, go to "Running Standalone Diagnostics from a Network Installation Management (NIM) Server" on page 675. If an HMC is not attached to the system, follow the directions for a full system partition.

Operating Considerations for Online and Standalone Diagnostics

Note: When possible, run online diagnostics in service mode. Online diagnostics perform additional functions compared to standalone diagnostics. Running online diagnostics in service mode ensures that the error state of the system that has been captured in NVRAM is available for your use in analyzing the problem. The AIX error log and certain SMIT functions are only available when diagnostics are run from the disk drive.

Consider the following items before using the diagnostics:
- Standalone diagnostics can run on systems configured for either a full (or single) system partition or a multiple partitioned system. When running in a partitioned system, the device from which you are booting standalone diagnostics must be made available to the partition dedicated to running standalone diagnostics. This may require moving the device from the partition that currently contains the boot device (for example, the CD-ROM or network adapter connected to the NIM server that has a standalone diagnostic image) to the partition used to run standalone diagnostics. For partitions running AIX levels under 5.2, if you move devices, reboot both source and destination partitions. For more information, see "Standalone Diagnostic Operation" on page 674.
- When diagnostics are installed, the device support for some devices might not get installed. If this is the case, that device does not display in the diagnostic test list when running disk-based diagnostics.
- When running diagnostics in a partitioned system, diagnostics will work only with the resources that were assigned to that partition. You must run diagnostics in the partition containing the resource that you want to test.

Identifying the Terminal Type to the Diagnostics

When you run diagnostics, you must identify which type of terminal you are using. If the terminal type is not known when the FUNCTION SELECTION menu is displayed, the diagnostics do not allow you to continue until a terminal is selected from the DEFINE TERMINAL option menu. Choose the ″lft″ selection when running diagnostics from a Hardware Management Console (HMC).

Undefined Terminal Types

If you specify an undefined terminal type from the DEFINE TERMINAL option menu, the menu prompts the user to enter a valid terminal type. The menu redisplays until either a valid type is entered or you exit the DEFINE TERMINAL option. For a system attached to an HMC use VT320 emulation. If the AIX operating system is being used, from the command line, type: `export term=vt320`

Resetting the Terminal

If you enter a terminal type that is valid (according to the DEFINE TERMINAL option menu) but is not the correct type for the Hardware Management Console (HMC) virtual terminal window being used, you may be unable to read the screen, use the function keys, or use the Enter key. Bypass these difficulties by pressing Ctrl-C to reset the terminal. The screen display that results from this reset depends on the mode in which the system is being run:

- Online Normal or Maintenance Mode - The command prompt displays.
- Standalone Mode or Online Service Mode - The terminal type is reset to `dumb`, the Diagnostic Operating Instruction panel displays, and you are required to go through the DEFINE TERMINAL process again.

Online Diagnostics Modes of Operation

Notes:

1. When running online diagnostics on a partition in a partitioned system, diagnostics can be run only on resources that are allocated to that partition.
2. Online diagnostics can only be run in a partition with AIX installed.

The online diagnostics can be run in the following modes:

- Service Mode
- Concurrent Mode
- Maintenance Mode

Service Mode

Service mode provides the most complete checkout of the system resources. This mode also requires that no other programs be running on the partition or on a full system partition. Except for the SCSI adapter and the disk drives used for paging, resources on all partitions or systems on a full system partition can be tested. However, note that the memory and processor are only tested during POST, and the results of the POST tests are reported by diagnostics.

Error-log analysis is done in service mode when you select the **Problem Determination** option on the DIAGNOSTIC MODE SELECTION menu.

Consider the following when you run the online diagnostics from a server or a disk:

- The diagnostics cannot be loaded and run from a disk until the AIX operating system has been installed and configured.
- The diagnostics cannot be loaded on a system (client) from a server if that system is not set up to boot from a server over a network. When the system is set up to boot from a server, the diagnostics are run in the same manner as they are from disk.

- On a full system partition, if the diagnostics are loaded from disk or a server, you must shut down the AIX operating system before turning off the system unit to prevent possible damage to disk data. Do this in either of the following ways:
  - If the diagnostics were loaded in standalone mode, press the F3 key until `DIAGNOSTIC OPERATING INSTRUCTIONS` displays. Then press the F3 key once again to shut down the AIX operating system.
  - If the diagnostics were loaded in maintenance or concurrent mode, type the `shutdown -F` command.
- Under some conditions, the system might stop, with instructions displayed on attached displays and terminals. Follow the instructions to select a console display.

Running Online Diagnostics in Service Mode with an HMC Attached to the System

To run the online diagnostics in service mode from the boot hard disk, do the following:

1. From the HMC, select **Partition Manager**.
2. Right-click on the mouse and select **Open Terminal Window**.
3. From the Service Processor Menu on the VTERM, select Option 2 **System Power Control**.
4. Select option 6. Verify that the state changes to `currently disabled`. Disabling fast system boot automatically enables slow boot.
5. Select Option 98 to exit the system power control menu.
6. Use the HMC to power on the managed system in a full system partition by selecting the managed system in the Contents area.
7. Right-click or select the desired system in the Contents area. Next, on the menu, choose **Selected**.
8. Select **Power On**.
9. Select the **Power on Diagnostic Stored Boot list** option (refer to "Full System Management Tasks" in the Hardware Management Console , order number SA23-1251, for more information on full system partitions).
10. Make sure that there is no media in the devices in the media drive.
11. Enter any passwords, if requested.

Running the Online Diagnostics with No HMC Attached

Online diagnostics can be loaded by booting from a hard file in the custom boot list by pressing the numeric 6 key on the keyboard.

To boot from the devices listed in the service mode boot list, perform the following procedure:

1. Verify with the system administrator and users that all programs may be stopped, then do so.
2. Turn off the system.

   Note: If AIX is running, type the `shutdown` command.
3. Wait until the Power-on LED stops flashing and remains off, then press the power button to turn the system on.
4. When the **keyboard** indicator appears during startup, press the numeric 6 key on the keyboard.
5. Enter any requested passwords.

After any requested passwords have been entered, the system attempts to boot from the first device of each type found on the list. If no bootable image is found on the first device of each type on the list, the system does not search through the other devices of that type for a bootable image; instead, it polls the first device of the next type.

If all types of devices in the boot list have been polled without finding a bootable image, the system restarts. This action gives the user the opportunity to start the System Management Services (by pressing the number 1 key on a directly attached keyboard or the number 1 on an ASCII terminal) before the system attempts to boot again.

Concurrent Mode

Running the online diagnostics in concurrent mode is started by entering **diag** at an AIX prompt. Use concurrent mode to run online diagnostics on some of the system resources while the system is running normal activity.

Because the system is running in normal operation, the following resources cannot be tested in concurrent mode:

- SCSI adapters connected to paging devices
- Disk drive used for paging
- Some display adapters and graphics related devices
- Memory (tested during POST)
- Processor (tested during POST)

The following levels of testing exist in concurrent mode:

- The **share-test level** tests a resource while the resource is being shared by programs running in the normal operation. This testing is mostly limited to normal commands that test for the presence of a device or adapter.
- The **sub-test level** tests a portion of a resource while the remaining part of the resource is being used in normal operation. For example, this test could test one port of a multiport device while the other ports are being used in normal operation.
- The **full-test level** requires the device not be assigned to or used by any other operation. This level of testing on a disk drive might require the use of the **varyoff** command. The diagnostics display menus to allow you to vary off the needed resource.

Error-log analysis is done in concurrent mode when you select the **Problem Determination** option on the DIAGNOSTIC MODE SELECTION menu.

To run the online diagnostics in concurrent mode, you must be logged in to the AIX operating system and have proper authority to issue the commands (if help is needed, see the system operator).

The **diag** command loads the diagnostic controller and displays the online diagnostic menus.

Running the Online Diagnostics in Concurrent Mode
To run online diagnostics in concurrent mode, do the following:

1. Log in to the AIX operating system as root user, or use CE Login.

2. Enter the **diag** command.

3. When the DIAGNOSTIC OPERATING INSTRUCTIONS display, follow the instructions to check out the desired resources.

4. When testing is complete, use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS. Press the F3 key again to return to the AIX operating system prompt. Be sure to vary on any resource that you had varied to off.

5. Press Ctrl-D to log off from root user or CE Login.

Maintenance Mode

Maintenance mode runs the online diagnostics using the customer's version of the AIX operating system. This mode requires that all activity on the partition running the AIX operating system be stopped so that the online diagnostics have most of the resources available to check. All of the system resources, except the SCSI adapters, memory, processor, and the disk drive used for paging, can be checked.

Error log analysis is done in maintenance mode when you select the **Problem Determination** option on the DIAGNOSTIC MODE SELECTION menu.

Use the **shutdown -m** command to stop all activity on the AIX operating system and put the AIX operating system into maintenance mode. The **diag** command is then used to invoke the diagnostic controller so you can run the diagnostics. After the diagnostic controller is loaded, follow the normal diagnostic instructions.

Running the Online Diagnostics in Maintenance Mode
To run the online diagnostics in maintenance mode, do the following:

1. Stop all programs running on the partition except the AIX operating system (if help is needed, see the system operator).

2. Log in to the AIX operating system as root user, or use CE Login.

3. Type the `shutdown -m` command.

4. When a message indicates the system is in maintenance mode, enter the **diag** command.

   Note: It might be necessary to set *TERM* type again.

5. When DIAGNOSTIC OPERATING INSTRUCTIONS screen displays, follow the displayed instructions to check out the desired resources.

6. When testing is complete, use the F3 key to return to DIAGNOSTIC OPERATING INSTRUCTIONS. Press the F3 key again to return to the AIX operating system prompt.

7. Press Ctrl-D to log off from root user or CE Login.

Standalone Diagnostic Operation

Use standalone diagnostics to test the system when the online diagnostics are not installed and as a method of testing the disk drives that cannot be tested by the online diagnostics.

Note: No error log analysis is done by the standalone diagnostics. The CD-ROM drive and the SCSI controller that controls it cannot be tested by the standalone diagnostics. Standalone diagnostics:

- Are resident on CD-ROM or a Network Installation Management (NIM) server
- Provide a method to test the system when the online diagnostics are not installed or cannot be loaded from the disk drive
- Allow testing of the disk drives and other resources that cannot be tested by the online diagnostics
- Do not have access to the AIX configuration data
- Do not have access to the AIX error log
- Do not allow for running of error log analysis

Considerations for Running Standalone Diagnostics on a Partitioned System

To run standalone diagnostics on a full system partition, you must reboot the entire system. However, for a partition in a partitioned system, you can boot standalone diagnostics either in a given partition or on the entire system (which is the same procedure as a full system partition). For a partitioned system, before running standalone diagnostics on a given partition, the user must move the device from the existing location where standalone diagnostics is booted (the CD-ROM drive or the network adapter connected to the NIM server, in the case of NIM boot of standalone diagnostics), to the partition that will run standalone diagnostics. Devices on a partitioned system are moved on an I/O-slot basis.

If the CD-ROM drive is moved from one partition to another, all SCSI devices on the same SCSI adapter card which the CD-ROM drive is attached must be moved to the same partition. It is recommended that you attach few SCSI devices to the same SCSI controller card to prevent moving them, along with the CD-ROM drive, between partitions. For partitions running below AIX 5.2, a reboot is required on the partition containing this device and on the moved device, but the system itself is *not* powered off in order to boot standalone diagnostics in a logical partitioned system partition.

Considerations for Running Standalone Diagnostics from CD-ROM

Consider the following when you run standalone diagnostics:

- The diagnostic CD must remain in the CD-ROM drive for the entire time that diagnostics are running.
- The diagnostic CD cannot be ejected from the CD-ROM drive after the diagnostics have loaded. The CD can only be ejected after the system has been turned off and then turned on (standalone mode) or after the diagnostics program has terminated (online concurrent mode).
- The CD-ROM drive from which diagnostics were loaded cannot be tested.
- The SCSI adapter (or circuitry) controlling the CD-ROM drive from which diagnostics were loaded cannot be tested.

Loading the Standalone Diagnostics from CD-ROM Using an HMC

To run standalone diagnostics in service mode from CD-ROM, do the following:

1. Stop all programs including the AIX operating system (get help if needed).
2. Remove all tapes, diskettes, and CD-ROMs.
3. Power off the 406/70 (refer to Full System Management Tasks in the Hardware Management Console , order number SA23-1251.
4. Right-click the mouse and select **Open Terminal Window**.
5. From the service processor menu on the VTERM, select option 2, **System Power Control Menu**.

6. Select option 6. Verify that the state changes to `currently disabled`. Disabling fast system boot automatically enables slow boot.

7. Select option 98 to exit the system power control menu.

8. Use the HMC to power on the managed server in a full system partition. Select the **Power on Diagnostic Default Boot List** (refer to Full System Management Tasks in the Hardware Management Console , order number SA23-1251).

9. Insert the CD-ROM into the system's CD-ROM drive (not into the HMC's CD-ROM drive).

Running the Standalone Diagnostics with CD-ROM with No HMC Attached

To load **standalone diagnostics** from the default boot list, perform the following procedure:

1. Verify with the system administrator and users that all programs may be stopped, then do so.

2. Turn off the system.

   Note: If AIX is running, type the `shutdown` command. If Linux is running, type the `shutdown now -h` command.

3. Wait until the Power-on LED stops flashing and remains off, then press the power button to turn on the system.

4. Immediately insert the diagnostic CD-ROM into the CD-ROM drive.

5. When or after the word **keyboard** appears during startup, press the numeric 5 key on the keyboard.

6. Enter any requested passwords.

Running Standalone Diagnostics from a Network Installation Management (NIM) Server

A client system connected to a network with a Network Installation Management (NIM) server can boot standalone diagnostics from the NIM server if the client-specific settings on both the NIM server and client are correct.

Notes:

1. All operations to configure the NIM server require root user authority.

2. If you replace the network adapter in the client, the network adapter hardware address settings for the client must be updated on the NIM server.

3. The **Cstate** for each standalone diagnostics client on the NIM server should be kept in the *diagnostic boot has been enabled* state.

4. On the client system, the NIM server network adapter should be put in the bootlist after the boot disk drive. This allows the system to boot in standalone diagnostics from the NIM server if there is a problem booting from the disk drive. Refer to the **Multiboot** section under "SMS" in the client system's service guide for information on setting the bootlist.

NIM Server Configuration

Refer to the "Advanced NIM Configuration Tasks" chapter of the *AIX Installation Guide and Reference*, order number SC23-4389 for information on doing the following:

• Registering a client on the NIM server

• Enabling a client to run diagnostics from the NIM server

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

Note: The *ClientName* is the name of the system on which you want to run standalone diagnostics.

System Response	Client Status

`#name:Cstate:`
`ClientName:diagnostic boot has been`
`enabled:`
	The client system is registered on the NIM server and enabled to run diagnostics from the NIM server.

`#name:Cstate:`
`ClientName:ready for a NIM operation:`
 	
or
 	
`#name:Cstate:`
`ClientName:BOS installation has been`
`enabled:`
	The client is registered on the NIM server but not enabled to run diagnostics from the NIM server.
	Note: If the client system is registered on the NIM server but Cstate has not been set, no data will be returned.

`0042-053 lsnim: there is no NIM object` `named "ClientName"`	The client is not registered on the NIM server.

Booting Standalone Diagnostics from the NIM Server on a System with an HMC Attached

To run standalone diagnostics on a client from the NIM server, do the following:

1. Remove any removable media (tape or CD-ROM).
2. Stop all programs including the AIX operating system (get help if needed).
3. If you are running standalone diagnostics in a full system partition, verify with the system administrator and system users that the system unit can shut down. Stop all programs, including the AIX operating system. Refer to the AIX operating system documentation for **shutdown** command information.

   In a partitioned system, make the CD-ROM drive available to the partition used to run standalone diagnostics (refer to the Hardware Management Console , order number SA23-1251 for more information). Verify with the system administrator and system users using that partition that all applications on that partition must be stopped, and that the partition will be rebooted. Stop all programs on that partition, including the operating system.
4. If you are in a full system partition, power on the system unit to run standalone diagnostics. In a partitioned system, reboot the partition to run standalone diagnostics.
5. When the keyboard indicator is displayed (the word **keyboard** on a HMC virtual terminal window or the keyboard icon on a graphical display), press the number 1 key on the keyboard to display the SMS menu.
6. Enter any requested passwords.
7. Select **Set Up Remote IPL** (Indicial Program Load).
8. Enter the client address, server address, gateway address (if applicable), and subnet mask.
9. If the NIM server is set up to allow pinging from the client system, use the **ping** utility in the RIPL utility to verify that the client system can ping the NIM server. Under the **ping** utility, choose the network adapter that provides the attachment to the NIM server to do the ping operation. If the ping returns with an OK prompt, the client is prepared to boot from the NIM server. If ping returns with a FAILED prompt, the client cannot proceed with the NIM boot.

   Note: If the ping fails, refer to "Boot Problems" on page 338 and follow the steps for network boot problems.

To do a one-time boot of the network adapter attach to the NIM server network, do the following:

1. Exit to the SMS Main screen.
2. Select **Select Boot Options**.
3. Select **Install or Boot a Device**.
4. On the Select Device Type screen. select **Network**.
5. Set the network parameters for the adapter from which you want to boot.
6. Exit completely from SMS. The system starts loading packets while doing a **bootp** from the network.

Follow the instructions on the screen to select the system console.

- If Diagnostics Operating Instructions Version x.x.x displays, standalone diagnostics have loaded successfully.
- If the AIX login prompt displays, standalone diagnostics did not load. Check the following items:
  - The network parameters on the client may be incorrect.
  - Cstate on the NIM server may be incorrect.
  - Network problems might be preventing you from connecting to the NIM server.

Verify the settings and the status of the network. If you continue to have problems, refer to "Boot Problems" on page 338 and follow the steps for network boot problems.

Chapter 7. Using the Service Processor

Notes:

1. The information in this chapter regarding the configuring of serial ports, and modems attached to those serial ports, applies only to the serial ports (S1 and S2) on the primary I/O book (location U1.18-P1-H2). None of this information is applicable to the serial ports, or modems attached to those serial ports, on the Hardware Management Console (HMC).

2. On some of the system management services (or service processor) screens, you will see the term *LPAR*, which is equivalent to the term *partitioned system*.

The service processor runs on its own power boundary and continually monitors hardware attributes and the environmental conditions within the system. The service processor is controlled by firmware and does not require the operating system to be operational to perform its tasks.

The service processor menus allow you to configure service processor options, as well as enable and disable functions.

Service processor menus are available using an HMC virtual terminal window when 0K is displayed on the operator panel or when the service processor has detected a server problem (such as a surveillance failure).

Service Processor Menus

The service processor menus are divided into the following groups:

- General user menu - the user must know the general-access password.
- Privileged user menus - the user must know the privileged-access password.

If the server is powered off, the service processor menus can be accessed locally or remotely on the following:

- Serial port 1 (S1)
- Serial port 2 (S2)
- The HMC

Accessing the Service Processor Menus Locally

Service processor menus can be accessed by opening a virtual terminal window on the HMC, or by attaching an ASCII terminal to serial port 1 (S1) or serial port 2 (S2). After 0K displays in the operator panel, press any key on the keyboard to signal the service.

Note: The service processor menus cannot be accessed simultaneously on a virtual terminal window on the HMC and on an ASCII terminal. Accessing the menus on the HMC locks out access to the ASCII terminals and the other way around.

When you gain access, the service processor prompts you for a password (if one is set), and when verified, displays the service processor menus.

The service processor menu prompt, represented by 0> or 1>, indicates the serial port to which the terminal is connected.

- An ASCII terminal can have the following prompts:
  - 0> indicates serial port 1 (S1)
  - 1> indicates serial port 2 (S2)
- The HMC always indicates 0>

Accessing the Service Processor Menus Remotely

If your system has a modem connected to serial port 1 or serial port 2 and is configured for call-in (see "Modem Configuration Menu" on page 706), access the service processor menus remotely as follows:

1. With the system powered off, call in from a remote terminal.
2. The service processor detects ring-indicate and prompts you for a password (if one is set). When verified, the service processor menus display remotely.

Saving and Restoring Service Processor Settings

All the settings that you make (except language) from the service processor menus can be backed up either for recovering from a fault that may corrupt these settings, or for replicating these settings to other servers that include a service processor.

The service aid, Save or Restore Hardware Management Policies, can be used to save your settings after initial setup or whenever the settings must be changed for system operation purposes.

It is strongly recommended that you use this service aid for backing up service processor settings to protect the usefulness of the service processor and the availability of the server. Refer to "Save or Restore Hardware Management Policies," in the "Introduction to Tasks and Service Aids" section of the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769.

Menu Inactivity

The service processor exits menu mode after ten minutes of inactivity and displays a message indicating that it has done so. Pressing any key on the virtual terminal window causes the main menu to display.

General User Menu

The menu options presented to the general user are a subset of the options available to the privileged user. The user must know the general-access password, if one is set, to access this menu.

```
        GENERAL USER MENU

  1. Power-on System

  2. Power-off System

  3. Read VPD Image from Last System Boot

  4. Read Progress Indicators from Last System Boot

  5. Read Service Processor Error Logs

  6. Read System POST Errors

 99. Exit from Menus

 0>
```

- **Power-on System**

  Allows the user to start the system using the current virtual terminal window as the active console.

- **Power-off System**

  This option is not available on this system.

- **Read VPD Image from Last System Boot**

  Displays manufacturer vital product data, such as serial numbers, part numbers, and so on, that were stored from the system boot prior to the one in progress now, for the entire system.

- **Read Progress Indicators from Last System Boot**

  Displays a number of the boot progress indicators, which may include service processor checkpoints, IPL checkpoints, or AIX configuration codes, from the previous system boot. This information can be useful in diagnosing system faults.

  Note: If you are running one or more logical partitions, enter the partition ID (0-15) to display progress indicators for that partition since the last system boot. If your system is running in full system partition mode, this option automatically displays details from partition 0.

  The progress indicator codes are listed from top (latest) to bottom (oldest).

  This information is not stored in nonvolatile storage. If the system is powered off using the power-on button on the operator panel, this information is retained. If the ac power is disconnected from the system, this information will be lost. For an example, refer to "LCD Progress Indicator Log" on page 724.

- **Read Service Processor Error Logs**

  Displays the service processor error logs. For an example, refer to "Service Processor Error Logs" on page 723.

- **Read System POST Errors**

  Displays additional error log information (this option is only for service personnel).

- **Exit from Menus**

  Selecting this option will exit the service processor menus. You can re-enter the menus by pressing any key on the console.

Privileged User Menus

The following menus are available to privileged users only. The user must know the privileged-access password, if one is set, to access these menus.

Main Menu

A listing at the top of the main menu contains the following:
* Your system's current firmware version
* The firmware copyright notice
* The system name given to your server during setup

You need the firmware version for reference when you either update or repair the functions of your service processor.

The system name, an optional field, is the name that your server reports in problem messages. This name helps your support team (for example, your system administrator, network administrator, or service representative) to more quickly identify the location, configuration, and history of your server. Set the system name, from the main menu, using option 6.

Note: The information under the Service Processor Firmware heading in the following Main Menu illustration is example information only.

```
        Service Processor Firmware
        VERSION: RH011007
        Copyright 2001 IBM Corporation
            SYSTEM NAME


        MAIN MENU

  1. Service Processor Setup Menu

  2. System Power Control Menu

  3. System Information Menu

  4. Language Selection Menu

  5. Call-In/Call-Out Setup Menu

  6. Set System Name

 99. Exit from Menus

 0>
```

- **Service Processor Setup Menu**

  See "Service Processor Setup Menu" on page 684 for more information.

- **System Power Control Menu**

  See "System Power Control Menu" on page 690 for more information.

- **System Information Menu**

  See "System Information Menu" on page 694 for more information.

- **Language Selection Menu**

  See "Language Selection Menu" on page 704 for more information.

- **Call-In/Call-Out Setup Menu**

  See "Call-In/Call-Out Setup Menu" on page 705 for more information.

- **Set System Name**

  Allows setting of the system name.

Service Processor Setup Menu

The following Service Processor Setup Menu is accessed from the Main Menu:

```
        SERVICE PROCESSOR SETUP MENU

  1. Change Privileged Access Password

  2. Change General Access Password

  3. Enable/Disable Console Mirroring:
       Currently Enabled

  4. Start Talk Mode

  5. OS Surveillance Setup Menu
  NOT supported in LPAR mode.

  6. Reset Service Processor

  7. Reprogram Flash EPROM Menu

  8. Serial Port Snoop Setup Menu
  NOT supported in LPAR mode.

  9. Scan Log Dump Policy:
  Currently Never

 98. Return to Previous Menu

 99. Exit from Menus

  0>
```

Note: Unless otherwise stated in menu responses, settings become effective when a menu is exited using option 98 or 99.

Passwords

Passwords can be any combination of up to eight alphanumeric characters. You can enter longer passwords, but the entries are truncated to include only the first eight characters. The privileged-access password can be set from service processor menus or from System Management Services (SMS) utilities (see Chapter 8, "Using System Management Services", on page 729). The general-access password can be set only from service processor menus.

For security purposes, the service processor counts the number of attempts to enter passwords. The results of not recognizing a password within this error threshold are different, depending on whether the attempts are being made locally (at the server) or remotely (through a modem). The error threshold is three attempts.

If the error threshold is reached by someone entering passwords at the server, the service processor commands the server to resume the initial program load (IPL). This action is taken based on the assumption that the server is in an adequately secure location with only authorized users having access. Such users must still successfully enter a login password to access the operating system.

If the error threshold is reached by someone entering passwords remotely, the service processor commands the server to power off to prevent potential security attacks on the server by unauthorized remote users. The following table lists what you can access with the privileged-access password and the general-access password.

Privileged Access Password	General Access Password	Resulting Menu
None	None	Service processor MAIN MENU displays.
Set	None	Users with the password see the service processor MAIN MENU. Users without password cannot log in.
Set	Set	Users see menus associated with the entered password.

If you forget the password, you must remove the battery for at least 30 seconds to disable the password.

- **Change Privileged-Access Password**

  Set or change the privileged-access password. It provides the user with the capability to access all service processor functions. This password is usually used by the system administrator or root user.

- **Change General-Access Password**

  Set or change the general-access password. It provides limited access to service processor menus, and is usually available to all users who are allowed to power on the server, especially remotely.

  Note: The general-access password can only be set or changed after the privileged access password is set.

- **Enable/Disable Console Mirroring**

  Note: Console mirroring is disabled in partitioned systems.

  Console mirroring is supported on serial port 1 (S1) and serial port 2 (S2). When console mirroring is enabled, the service processor sends information to all serial ports. The serial port from which console mirroring is enabled is referred to as the *active port*. The *mirror port* is determined when keyboard input is detected from one of the other ports. From this point on, the service processor sends information only to the active port and the mirror port. This capability can be enabled by local or remote users, providing local users with the capability to monitor remote sessions. Console mirroring can be enabled for the current session only. For more information, see "Console Mirroring" on page 722.

- **Start Talk Mode**

In a console-mirroring session, it is useful for those who are monitoring the session to be able to communicate with each other. Selecting **Start Talk Mode** activates the keyboards and displays for such communications while console mirroring is established. This is a full duplex link, so message interference is possible. Alternating messages between users works best.

- **OS Surveillance Setup Menu**

  Note: This option is disabled in partitioned systems.

  This menu can be used to set up operating system (OS) surveillance.

  ```
         OS Surveillance Setup Menu

    1. Surveillance:
         Currently Enabled

    2. Surveillance Time Interval:
         2 minutes

    3. Surveillance Delay:
         2 minutes


   98. Return to Previous Menu

   0>
  ```

  – **Surveillance**

    Can be set to Enabled or Disabled.

  – **Surveillance Time Interval**

    Can be set to any number from 2 through 255.

  – **Surveillance Delay**

    Can be set to any number from 0 through 255.

  Refer to "Service Processor System Monitoring - Surveillance" on page 718 for more information about surveillance.

- **Reset Service Processor**

  If this option is selected, entering Y causes the service processor to reboot.

- **Reprogram Flash EPROM Menu**

  This option updates the system EPROMs. After entering Y to indicate that you want to continue, you are prompted to enter the update diskettes. Follow the instructions on the screen. When the update is complete, the service processor reboots.

  All system EPROMs that can be reprogrammed are updated at the same time and are as follows:

  – System power control network programming
  – Service processor programming
  – System firmware programming
  – Run-Time Abstraction Services

- **Serial Port Snoop Setup Menu**

  Note: This option is disabled in partitioned systems.

  This menu can be used to set up serial port snooping, in which the user can configure serial port 1 as a "catch-all" reset device.

  From the service processor main menu, select option 1, service processor setup menu, then select option 8 (Serial Port Snoop Setup Menu).

```
          SERIAL PORT SNOOP SETUP MENU

   1. System reset string:
        Currently Unassigned

   2. Snoop Serial Port:
        Currently Unassigned

  98. Return to Previous Menu

1>
```

  Use the **Snoop Serial Port** option to select the serial port to snoop.

  Note: Only serial port 1 is supported.

  Use the system reset string option to enter the system reset string, which resets the machine when it is detected on the main console on Serial Port 1.

  After serial port snooping is correctly configured, at any point after the system is booted to AIX, whenever the reset string is typed on the main console, the system uses the service processor reboot policy to restart.

  Because pressing Enter after the reset string is not required, make sure that the string is not common or trivial. A mixed-case string is recommended.

- **Scan Log Dump Policy**

  A scan dump is the collection of chip data that the service processor gathers after a system malfunction, such as a checkstop or hang. The scan dump data may contain chip scan rings, chip trace arrays, and SCOM contents.

  The scan dump data are stored in the system control store. The size of the scan dump area is approximately 4 MB.

  During the scan log dump, A8xx (in the range A810 to A8FF) displays in the operator panel. The xx characters will change as the scan log dump progresses. If the xx characters do not change after several minutes, the service processor is hung and must be reset.

  When the scan log dump is complete, depending on how the reboot policy is set, the system will either:

  – Go to the standby state (and the service processor menus will be available), indicated by OK or STBY in the operator panel

  OR

  – Attempt to reboot.

```
Scan Log Dump Setup Menu

   1. Scan Log Dump Policy:
        Currently As Needed

   2. Scan Log Dump Content:
        Currently As Requested

   3.  Immediate Dump

  98. Return to Previous Menu

0>1
   Select from the following options:
   (As Needed=2, Always=3)

   Enter New Option:
0>1
```

The scan log dump policy can be set to the following:

2=As Needed
> The processor run-time diagnostics record the dump data base on the error type. This is the default value.

3=Always
> Selecting this option allows the service processor to record a scan log dump for all error types.

The scan log dump policy can also be set from the Tasks menu in the AIX service aids.

Option 2 displays the following screen:

```
            Scan Log Dump Setup Menu

   1. Scan Log Dump Policy:
        Currently As Needed

   2. Scan Log Dump Content:
        Currently As Requested

   3.  Immediate Dump

  98. Return to Previous Menu

0>2
   Select from the following options:
   (As Requested=1, Optimum=2, Complete=3, Minimum=4))

   Enter New Option:
0>0
```

The scan log dump content can be set to the following:

1 = As needed
> The processor run-time diagnostics will select the the contents of the dump file based on the type of error that occurs. This is the default value.

2 = Optimum
> The dump will include the smallest amount of information possible (a minimum number of hardware scan log rings).

3 = Complete
> The dump will include as much information as possible to allow the complete analysis of hardware and software errors.

4 = Minimum

> The dump will include the smallest amount of information possible (a minimum number of hardware scan log rings).

The complete dump will take the longest time to finish; it may take as long as 1.5 hours on a fully configured system.

Option 3, **Immediate Dump**, can only be used when the system is in the standby state with power on. It is used to dump the system data after a checkstop or machine check occurs when the system firmware is running, or when the operating system is booting or running.

The scan log dump policy can also be set from the Tasks menu in the AIX service aids.

If a valid dump file already exists, the dump control code will stop because the contents of the prior dump must be protected.

System Power Control Menu

This menu is used to set power control options. Other menus that control boot options are available from this menu.

```
        SYSTEM POWER CONTROL MENU

  1. Enable/Disable Unattended Start Mode:
        Currently Enabled

  2. Ring Indicate Power-On Menu

  3. Reboot/Restart Policy Setup Menu

  4. Power-On System

  5. Power-Off System

  6. Enable/Disable Fast System Boot
        Currently Enabled

  7. Boot Mode Menu

 98. Return to Previous Menu

 99. Exit from Menus

 0>
```

- **Enable/Disable Unattended Start Mode**

  Use this option to instruct the service processor to restore the power state of the server after a temporary power failure. Unattended start mode can also be set through the System Management Services (SMS) menus. This option is intended to be used on servers that require automatic power-on after a power failure. For more information, see "System Power-On Methods" on page 711.

- **Ring Indicate Power-On Menu**

```
        RING INDICATE POWER-ON MENU

  1. Ring indicate power-on :
      Currently Enabled

  2. Number of rings:
      Currently  3

30. Refresh Modem Settings

98. Return to Previous Menu
```

Ring indicate power-on is enabled by default on both serial port 1 (S1) and serial port 2 (S2). When ring indicate power-on is enabled, call-in is disabled.

If ring indicate power-on is enabled and call-in is already enabled, you will be asked to confirm your choice. Refer to the message displayed on your screen.

If the ring indicate power-on setting is changed, you must select option 30, **Refresh Modem Settings** to update the modem settings. If **Refresh Modem Settings** is selected, and the modem(s) have not been configured, you will be asked to configure the modems first. See "Call-In/Call-Out Setup Menu" on page 705 for information on configuring modems.

Option 2 is used to set the number of rings.

- **Reboot/Restart Policy Setup Menu**

  The following menu controls the Reboot/Restart Policy:

```
        Reboot/Restart Policy Setup Menu

  1. Number of reboot attempts:
      Currently 1

  2. Use OS-Defined restart policy?
      Currently No

  3. Enable supplemental restart policy?
      Currently Yes

  4. Call-Out before restart:
      Currently Disabled

98. Return to Previous Menu

0>
```

Reboot is the process of bringing up the system hardware; for example, from a system reset or power on. *Restart* is activating the operating system after the system hardware is reinitialized. Restart must follow a successful reboot.

– **Number of reboot attempts** - If the server fails to successfully complete the boot process, it attempts to reboot the number of times specified. Entry values equal to or greater than 0 are valid. Only successive failed reboot/restart attempts are counted.

– **Use OS-Defined restart policy** - In a full system partition, this allows the service processor to react in the same way that the operating system does to major system faults by reading the setting of the operating system parameter **Automatically Restart/Reboot After a System Crash**. This parameter might already be defined, depending on the operating system or its version (or level). If the operating system automatic restart setting is defined, it can be set to respond to a major fault by restarting or by not restarting. See your operating system documentation for details on setting up operating system automatic restarts. The default value is No.

On a partitioned system, this setting is ignored.

- **Enable supplemental restart policy** - The default setting is Yes. When set to Yes in a full system partition, the service processor restarts the system when the system loses control as detected by service processor surveillance, and either:

  - The **Use OS-Defined restart policy** is set to No.

  OR

  - The **Use OS-Defined restart policy** is set to Yes, and the operating system has no automatic restart policy.

  If set to Yes in a partitioned system, the service processor restarts the system when the system loses control and it is detected by service processor surveillance.

- **Call-Out before restart (Enabled/Disabled)** - If a restart is necessary due to a system fault, and you are running a full system partition, you can enable the service processor to call out and report the event. This option can be valuable if the number of these events becomes excessive, which might signal a bigger problem.

  This setting is ignored on a partitioned system.

- **Power-On System**

  Allows immediate power-on of the system.

- **Power-Off System**

  This option is not available on this system.

- **Enable/Disable Fast System Boot**

  Allows the user to select the IPL type, mode, and speed of the system boot.

  Attention: Selecting the fast IPL results in several diagnostic tests being skipped and a shorter memory test being run.

- **Boot Mode Menu**

  Note: This option is disabled in partitioned systems.

  The Boot Mode Menu allows you to select a boot mode.

  ```
         Boot Mode Menu

   1. Boot to SMS Menu:
        Currently Disabled

   2. Service Mode Boot from Saved List:
        Currently Disabled

   3. Service Mode Boot from Default List:
        Currently Disabled

   4. Boot to Open Firmware Prompt:
        Currently Disabled

  98. Return to Previous Menu

  0>
  ```

  To select a boot mode, select a number and press Enter. The item corresponding to the selected number toggles between Disabled to Enabled. If a boot mode is Enabled, the boot mode selected is performed, and the Disabled/Enabled selection is reset to Disabled. The following describes each boot mode:

  – **Boot to SMS Menu**

    When this selection is enabled, the system boots to the System Management Services (SMS) Menu.

  – **Service Mode Boot from Saved List**

    This selection causes the system to perform a service mode boot using the service mode boot list saved in NVRAM. If the system boots AIX from the disk drive and AIX diagnostics are loaded on the disk drive, AIX boots to the diagnostics menu.

    Using this option to boot the system is the preferred way to run online diagnostics.

  – **Service Mode Boot from Default List**

    This selection is similar to **Service Mode Boot from Saved List**, except the system boots using the default boot list that is stored in the system firmware. This is normally used to try to boot customer diagnostics from the CD-ROM drive.

    Using this option to boot the system is the preferred way to run standalone diagnostics.

  – **Boot to Open Firmware**

    This option should only be used by service personnel to obtain additional debug information. When this selection is enabled, the system boots to the open firmware prompt.

System Information Menu

This menu provides access to system configuration information, error logs, system resources, and processor configuration.

```
        SYSTEM INFORMATION MENU

   1. Read VPD Image from Last System Boot

   2. Read Progress Indicators from Last System Boot

   3. Read Service Processor Error Logs

   4. Read System POST Errors

   5. Read NVRAM

   6. Read Service Processor Configuration

   7. Processor Configuration/Deconfiguration Menu

   8. Memory Configuration/Deconfiguration Menu

   9. Power Control Network Utilities Menu

  10. LED Control Menu

  11. MCM/L3 Interposer Plug Count Menu

  12. Performance Mode Setup Menu

  13. L3 Mode Menu
          Not Applicable

  14. Remote I/O (RIO) Link Speed Setup Menu

 98. Return to Previous Menu

  99. Exit from Menus

  0>
```

- **Read VPD Image from Last System Boot**

  Displays manufacturer's vital product data (VPD), such as serial numbers, part numbers, and so on, that was stored from the system boot prior to the one in progress now. VPD from all devices in the system is displayed.

- **Read Progress Indicators from Last System Boot**

  Displays a number of the boot progress indicators, which may include service processor checkpoints, IPL checkpoints, or AIX configuration codes, from the previous system boot. This information can be useful in diagnosing system faults.

  Note: If you are running from a partitioned system, enter the partition ID (0-15) to display progress indicators for that partition since the last system boot. In a full system partition, this option automatically displays details from partition 0.

  The progress indicator codes are listed from top (latest) to bottom (oldest).

  This information is not stored in nonvolatile storage. If the system is powered off using the power-on button on the operator panel, this information is retained. If the ac power is disconnected from the system, this information will be lost. For an example, refer to "LCD Progress Indicator Log" on page 724.

- **Read Service Processor Error Logs**

  Displays error conditions detected by the service processor. Refer to "Service Processor Error Logs" on page 723 for an example of this error log.

- **Read System POST Errors**

This option should only be used by service personnel to obtain additional debug information.

- **Read NVRAM**

  Displays Non Volatile Random Access Memory (NVRAM) content.

- **Read Service Processor Configuration**

  Displays current service processor configuration.

- **Processor Configuration/Deconfiguration Menu**

  Enable/Disable CPU Repeat Gard: CPU repeat gard automatically deconfigures a CPU during a system boot if a processor has failed BIST (built-in self test), caused a machine check or check stop, or has reached a threshold of recoverable errors. The processor will remain deconfigured until repeat gard is disabled or the processor is replaced.

  CPU repeat gard is enabled by default.

  For more information, see "Configuring and Deconfiguring Processors or Memory" on page 718.

  Enable/Disable Dynamic Processor Sparing: This option is part of the Capacity Upgrade on Demand (CUoD) function. Dynamic processor sparing is the capability of the system to deconfigure a failing (or potentially failing) processor and then configure a replacement processor from the unlicensed CUoD processor pool.

  – If the system is running logical partitions, the dynamic processor sparing operation takes place with the system running.

  – If the system is booted in a full system partition, the system must be rebooted for the dynamic processor sparing operation to take place.

Note: The memory affinity of the failing processor is not taken into account when the replacement processor is assigned; the replacement processor is the next one that is available.

The Processor Configuration/Deconfiguration menu allows the user to change the system processor configuration. If it is necessary to take one of the processors offline, use this menu to deconfigure the processor, and then reconfigure the processor at a later time. An example of this menu follows:

```
        PROCESSOR CONFIGURATION/DECONFIGURATION MENU

 77. Enable/Disable CPU Repeat Gard: Currently Enabled

 78. Enable/Disable Dynamic Processor Sparing (if available): Currently enabled

  1.  0  3.0  (00)  Configured by system     2.  1  3.1  (00)  Deconfigured by system
  3.  2  3.2  (00)  Configured by system     4.  3  3.3  (00)  Configured by system
  5.  4  3.4  (00)  Configured by system     6.  5  3.5  (00)  Deconfigured by system
  7.  6  3.6  (00)  Configured by system     8.  7  3.7  (00)  Configured by system




 98. Return to Previous Menu

 0>
```

Note: This table is built from vital product data collected during the last boot sequence. The first time the system is powered on, or after the system's nonvolatile RAM (NVRAM) has been erased, this table may be empty. The table is rebuilt during the next boot into AIX.

The fields of the previous table represent the following:

Column 1

     (1.) Menu selection index.

Column 2

(0) Logical processor device number assigned by AIX. You can display these logical device numbers by issuing the following command on the AIX command line:

`lsdev -C | grep proc`

Column 3

(3.0) Processor address list used by the service processor.

Column 4

(00) Error status of the processors.

The error status of each processor is indicated by *AB*, where *B* indicates the number of errors and *A* indicates the type of error according to the following:

1. Bring-up failure
2. Run-time non-recoverable failure
3. Run-time recoverable failure
4. Group integrity failure
5. Non-repeat-gardable error. The resource may be reconfigured on the next boot.

A status of 00 indicates that the CPU has not had any errors logged against it by the service processor.

To enable or disable CPU repeat gard, use menu option 77. The default is enabled.

If CPU repeat gard is disabled, processors that are in the ″deconfigured by system″ state will be reconfigured. These reconfigured processors are then tested during the boot process, and if they pass, they remain online. If they fail the boot testing, they are deconfigured even though CPU repeat gard is disabled.

The failure history of each CPU is retained. If a processor with a history of failures is brought back online by disabling repeat gard, it remains online if it passes testing during the boot process. However, if CPU repeat gard is enabled, the processor is taken offline again because of its history of failures.

Notes:

1. The processor numbering scheme used by the service processor is different from the numbering scheme used by AIX. To ensure the correct processor is selected, consult the AIX documentation before configuring or deconfiguring a processor.
2. The number of processors available to AIX can be determined by issuing the following command on the AIX command line: `bindprocessor -q`.

- **Memory Configuration/Deconfiguration Menu**

  Enable/Disable Memory Repeat Gard: Memory repeat gard partially or fully deconfigures a memory book automatically during a system boot. If a memory book has failed BIST POST, caused a machine check or checkstop, or has reached a threshold of recoverable errors, the memory will remain deconfigured until repeat gard is disabled or the memory is replaced.

  Memory repeat gard is enabled by default.

  For more information, see "Configuring and Deconfiguring Processors or Memory" on page 718.

  Runtime Recoverable Error Repeat Gard: The runtime recoverable error repeat gard flag controls the deallocation of the memory if a recoverable error occurs during runtime. If a recoverable memory error occurs, and the runtime recoverable error repeat gard is disabled, the system will continue running with no change in the memory configuration. If a recoverable memory error occurs, and runtime recoverable error repeat gard is enabled, the memory half-book or book in which the error occurred will be taken offline.

  Runtime Recoverable Error Repeat Gard is disabled by default.

  These configuration/deconfiguration menus allow the user to change the system memory configuration. If it is necessary to take one of the memory books partially or completely offline, this menu allows you

to deconfigure a book, and then reconfigure the book at a later time. This menu also allows you to see if the repeat gard function has partially or completely deconfigured a memory book.

When this option is selected, a menu displays. The following is an example of this menu:

```
        MEMORY CONFIGURATION/DECONFIGURATION MENU

 77. Enable/Disable Memory Repeat Gard: Currently Enabled

 78. Runtime Recoverable Error Repeat Gard: Currently Enabled

  1. Memory card

 98. Return to Previous Menu
```

After you select the memory card option by entering 1, a menu displays, allowing the selection of a memory book. The following is an example of this menu.

```
        MEMORY CONFIGURATION/DECONFIGURATION MENU


 1: 16.16(00, -)  Configured by system   2: 17.17(00, -)  Configured by system
 3: 18.18(00, -)  Configured by system   4: 19.19(00, 1)  Partially deconfigured by system


 98. Return to Previous Menu
```

Note: This table is built from vital product data collected during the last boot sequence. The first time the system is powered on, or after the system's nonvolatile RAM (NVRAM) has been erased, this table may be empty. The table is rebuilt during the next boot into AIX.

The fields in the previous table represent the following:

Column 1
> 1. Menu selection index/book number

Column 2
> xx.xx : Book address used by service processor

Column 3
> (00, -) Error/deconfiguration status

The error status of the each memory book is indicated by (AB,-1) where B indicates the number of errors and A indicates the type of error according to the following:
1. Bring-up failure
2. Run-time non-recoverable failure
3. Run-time recoverable failure
4. Group integrity failure
5. Non-repeat-gardable error. The resource may be reconfigured on the next boot.

An error status of (00, -) (for example, `11.16(00, -)`) indicates that the memory book has not had any errors logged against it by the service processor, and it is fully configured.

The field after the error status will be a dash (-), 0, or 1. The dash indicates that the memory book is fully configured. A 0 or 1 indicates that memory repeat gard has deconfigured half of the memory book. If this occurs, the status of the book in the menu is shown as Partially deconfigured by system.

To change the memory configuration, select the number of the memory book. The memory book state will change from `configured` to `deconfigured` or from `deconfigured` to `configured`.

This menu only allows the deconfiguration of an entire book; it does not allow the manual deconfiguration of half a book. If half a book has been configured by the system (Partially deconfigured), it can be manually reconfigured using this menu.

In the previous example menu, each line shows two books and indicates whether they are configured, deconfigured, or partially deconfigured.

To enable or disable Memory Repeat Gard, use menu option 77 of the Memory Configuration/Deconfiguration Menu. The default is enabled.

To enable or disable runtime recoverable error repeat gard, use option 78 of the Memory Configuration/Deconfiguration Menu. The default is enabled.

The failure history of each book is retained. If a book with a history of failures is brought back online by disabling Repeat Gard, it remains online if it passes testing during the boot process. However, if Repeat Gard is enabled, the book is taken offline again because of its history of failures.

The four inner memory books, if present, are listed first, if present. The memory books are shown in the following order of physical location code:

1	U1.18-P1-M2
2	U1.18-P1-M3
3	U1.18-P1-M7
4	U1.18-P1-M6

- **Power Control Network Utilities Menu**

```
        POWER CONTROL NETWORK UTILITIES MENU

 1. Lamp Test for all Operator Panels

 2. Display I/O Type
  Not Supported
 3. Change I/O Type

 4. Collect & display SPCN trace data

98. Return to Previous Menu

 0>
```

- **Lamp Test for All Operator Panels**

  Selecting this option tests the media drawer operator panel's indicators by causing them to blink on and off for approximately 30 seconds.

- **Change I/O Type**

  Use this option to change the I/O type of the primary I/O book after a service action or configuration change if the I/O type is incorrect. If this option is chosen, you will be asked to make the following entries:

  - For the I/O drawer address, type 1.

  - For the I/O type, type 98.

  If either value is not valid, a failure message displays on the console. Press Enter to return to the Power Control Network Utilities Menu.

- **Collect & display SPCN trace data**

  This option is used by service personnel to dump the SPCN trace data from the processor subsystem (CEC drawer) to gather additional debug information.

To dump the SPCN trace data for the processor subsystem (CEC drawer), enter 0 when prompted for the SPCN drawer number and enter d0 when prompted for the unit address, as shown in the example screen:

```
Enter the SPCN drawer number:   0

Enter the unit address:  d0
```

Note: It may take up to 5 minutes for the trace data to be dumped to the screen.

The SPCN trace data will be displayed on the screen. An example of this output follows:

```
Please wait....

***** Power Trace Data Start *****

00000000ffffffffffff0006158800a000061574a0000006020035370006020210
0313000602420000000060241040b0006110a004000061109020000611020804
0000000000061102080b0006041000000006d0e3850000061103000000061109
0200000604020000000060402000100060041000010006d0e38501000604100002
000000000006d0e3850200060410000300006d0e3850300061580100000061540
031800061011160000006101116010006158010010007158156a0000711000010
0000000000091012000000910120001
***** Power Trace data End *****

                (Press Return to Continue)
```

- **LED Control Menu**

  This menu displays the state of the processor subsystem disturbance or system attention LED and the fault/identify LED on the I/O subsystem(s). Use this menu to toggle the attention/fault LEDs between identify (blinking) and off. Option 1 is available only when the system is in the error state (the CEC is powered on and the service processor menus are available). Option 1 is not available when the system is in standby.

  An example of this menu follows:

```
        LED Control Menu


  1. Set/Reset Identify LED state

  2. Clear System Attention Indicator

 98. Return to Previous Menu

  Enter LED index

0 >
```

The processor subsystem disturbance or system attention LED is located on the operator panel in the media drawer. The I/O drawer fault/identify LED is located on the front of each I/O subsystem.

If option 1 is selected, a list of location codes of the I/O subsystems and the CEC drawer displays. The screen will be similar to the following:

```
1.  U1.9-P1

2.  U1.9-P2

3.  U1.5-P1

4.  U1.5-P2

5.  U1.1-P1

6.  U1.1-P2

7.  U2.1-P1

8.  U2.1-P2

9.  U2.5-P1

10.  U2.5-P2

Enter number corresponding to the location code, or
press Return to continue, or 'x' to return to the menu.
0>4
```

If one of the devices is selected using the index number, the present state of its LED will be displayed, and you are given the option to toggle it, as shown in the following screen. The final state of the LED will then be displayed, whether or not it was changed.

```
U1.5-P2 is currently in the OFF state

Select from the following (1=IDENTIFY ON, 2=IDENTIFY OFF)
0>2
Please wait...

U1.5-P2 is currently in the OFF state
        (Press Return to continue)
```

Option 2, **Clear System Attention Indicator**, will clear the attention indicator on the operator panel in the media drawer.

- **MCM/L3 Interposer Plug Count Menu**

  Attention: Do not power on the system when in this menu. Fully exit this menu before powering on the system.

  This menu tracks the number of times that the MCMs and L3 cache modules have been plugged into the system backplane.

  If an MCM or L3 cache module is reseated or replaced, the plug count for the module must be incremented by 1. If the plug count exceeds the limit of 10 (reaches 11 or greater), a 450x yyyy or 4B2x yyyy error with a detail value of CFF0 that identifies an MCM or L3 cache module will be posted in the service processor error log. The FRU should be replaced during a deferred service call.

  If an MCM or L3 cache module is reseated or replaced or installed during an MES upgrade, the plug count must be set using the MCM/L3 Interposer Plug Count menu. If the plug count information is not included with the new or replacement module, enter the default value of 7. If the plug count is not entered, a B1xx 4698 error code, with a detail value of E10B or E10C, will be posted in the service processor error log.

  If the primary I/O book is replaced, the plug counts are retained. However the MCM/L3 Plug Count menu must be accessed and option 50, **Commit the values and write to the VPD**, must be executed so that the plug counts are revalidated. If the counts are not revalidated, a B1xx 4698 error code, with a detail value of E10B or E10C, will be posted in the service processor error log.

Notes:

1. The plug count will be 0 for those positions in which L3 cache modules and MCMs have never been installed.
2. If MCM and L3 modules are removed from the system and not replaced, those plug counts are retained until they are manually changed.

A screen similar to the following will be displayed. In this example, all four MCMs and all 16 L3 modules are shown.

```
                MCM/L3 Interposer Plug Count Menu


  1. L3_13:7   2. L3_0:7    3. MCM_0:7   4. L3_1:7   5. L3_4:7

  6. L3_14:7   7. L3_3:7                 8. L3_2:7   9. L3_7:7



              10. MCM_3:1       11. MCM_2:1


 12. L3_15:7  13. L3_10:7  14. MCM_1:7   15. L3_11:7  16. L3_6:7

 17. L3_12:7  18. L3_9:7                 19. L3_8:7   20. L3_5:7

 50. Commit the values and write to the VPD

 98. Return to Previous Menu
```

The format of the preceding menu entries is the menu index number followed by the plug count after the colon. The following table matches the index number with the physical location codes.

Menu Index Number	Physical Location Code
1. L3_13	U1.18-P1-C5
2. L3_0	U1.18-P1-C6
3. MCM_0	U1.18-P1-C1
4. L3_1	U1.18-P1-C7
5. L3_4	U1.18-P1-C8
6. L3_14	U1.18-P1-C9
7. L3_3	U1.18-P1-C10
8. L3_2	U1.18-P1-C11
9. L3_7	U1.18-P1-C12
10. MCM_3	U1.18-P1-C2
11. MCM_2	U1.18-P1-C3
12. L3_15	U1.18-P1-C13
13. L3_10	U1.18-P1-C14
14. MCM_1	U1.18-P1-C4
15. L3_11	U1.18-P1-C15
16. L3_6	U1.18-P1-C16
17. L3_12	U1.18-P1-C17
18. L3_9	U1.18-P1-C18
19. L3_8	U1.18-P1-C19
20. L3_5	U1.18-P1-C20

To change the plug count for a particular module, enter a menu index number. For example, to change the plug count of the L3 module that is physically in the upper-right corner (U1.18-P1-C8), type 5, then enter the new plug count.

When all of the new plug counts have been entered, select 50, **Commit the values and write to the VPD**. This action stores the new values in NVRAM.

Determining the number of MCMs in a system: To determine the number of MCMs installed in the system, do one of the following:

– If the managed system is powered down, go to "System Information Menu" on page 694, then to the section titled "Processor Configuration/Deconfiguration Menu" and refer to the example menu. The VPD port is shown as *x.y*, where *x* is in the range 3-6 and *y* is in the range 0-7.

The listing of the VPD ports on the screen is used to determine the number of MCMs in the managed system.

```
3.y=MCM0 (U1.18-P1-C1)
4.y=MCM1 (U1.18-P1-C4)
```

– If AIX is booted on the managed system, issue the following command on the AIX command line, to display a line of information for each MCM installed in the system:

```
lscfg -vp | grep MCM
```

The following table shows the plugging order of each MCM and its associated L3 cache modules.

MCM	Physical Location CODE	Interposer Plug Count Menu Index Number
First MCM: L3 Modules	U1.18-P1-C1 U1.18-P1-C6 U1.18-P1-C7 U1.18-P1-C10 U1.18-P1-C11	3. MCM_0 2. L3_0 4. L3_1 7. L3_3 8. L3_2
Second MCM: L3 Modules	U1.18-P1-C4 U1.18-P1-C14 U1.18-P1-C15 U1.18-P1-C18 U1.18-P1-C19	14. MCM_1 13. L3_10 15. L3_11 18. L3_9 19. L3_8

- **Performance Mode Setup Menu**

  If certain types of processor cards are installed in the system, this menu is not applicable. For other types of processor cards, this menu will be active after the first boot as noted below.

  Note: The first time the system is booted after NVRAM is cleared, `Not Applicable` displays under `Performance Mode Setup Menu` on the screen. This may also happen if the service processor is replaced, or the processor MCMs are upgraded.

  If option 12 is selected when `Not Applicable` is on the screen, the system responds with `Not Applicable` and redisplay the system information menu. The setup menu can be displayed after the performance mode is set, which happens the first time the system is booted.

The default performance mode is set by the firmware during IPL. The default mode provides the optimum performance for the hardware configuration of the system. The performance mode is systemwide; it cannot be set on a per-partition basis.

You can override the default setting by using the performance mode setup menu. The performance mode setup menu will be similar to the following:

```
                    Default Performance Mode:  Large Commercial System optimization

  1. Current Performance Mode:
  Large Commercial System optimization


98. Return to Previous Menu

0>1
```

Selecting option 1 displays the following performance modes:

```
Select from the following options:

1. Large Commercial System optimization
2. Standard Operation
3. Turbo Database Mode

0>
```

Notes:

1. Some MCM configuration changes, such as going from an 8-way to a 24-way system, will cause the default performance mode to change. This new setting will not be reflected in the menu until after the system is rebooted with the new configuration.

2. If the NVRAM has been cleared, the default performance mode and the current performance mode will indicate `uninitialized`.

To override the default setting, a brief description of each performance mode follows:

– Large Commercial System Optimization is the setting for systems that do not fall into the other two categories, standard operation and turbo database mode. This setting provides the best performance for most applications.

– Standard Operation optimizes the system for large memory bandwidth applications where minimal sharing of data occurs and the likelihood of significant hardware data-prefetching exists.

– Turbo Database Mode optimizes system operation for environments where there is a large amount of data sharing among processes running concurrently on the system.

- **L3 Mode Menu**

    This function is not applicable to this system.

- **Remote I/O (RIO) Link Speed Set Up Menu**

    This option is used to change the speed of the RIO interface to external drawers. On this system, setting this speed will have no effect on the system.

    The hardware capability is detected and set by the system firmware during the boot process. If the hardware capability is unitialized (after NVRAM is cleared), it will be set during the first boot and remain set during subsequent boots.

    The maximum RIO speed setting will remain uninitialized until set by the user.

    The user can set the speed lower than or equal to the hardware capability, but not higher. If the hardware capability is 1000 Mbps, the user can set the link speed to 500 Mbps, and the RIO link will run at 500 Mbps. However, if the hardware capability is 500 Mbps and the user selects 1000 Mbps, the user's selection will be ignored by the system.

    If this option is chosen, the menu similar to the following is displayed:

```
  Remote I/O (RIO) Link Speed Set Up Menu

   Hardware Capability (internal and external):  1000 Mbps

   1.  Maximum RIO speed setting (internal and external):
       Currently Uninitialized

   98. Return to previous menu.

  0>1
```

If option 1 is selected, the RIO interface speed can be set as follows:

```
Enter new value for this option:  (1 = 1000 MBPS, 2 = 500 Mbps)
   0>
```

This setting will remain in effect until it is changed or NVRAM is cleared.

Language Selection Menu

The service processor menus and messages are available in various languages. This menu allows selecting languages in which the service processor and system firmware menus and messages are displayed.

```
        LANGUAGE SELECTION MENU

   1. English

   2. Francais

   3. Deutsch

   4. Italiano

   5. Espanol

  98. Return to Previous Menu

  99. Exit from Menus

  0>
```

Note: Your virtual terminal window must support the ISO-8859 character set to correctly display languages other than English.

Call-In/Call-Out Setup Menu

Note: The information in this section regarding the configuring of serial ports, and modems attached to those serial ports, applies only to the serial ports (S1 and S2) on the primary I/O book (location U1.18-P1-H2). These serial ports are normally used for call-in and call-out.

Call-out is disabled in partitioned systems. The call-out function is normally handled by the Service Focal Point application running on the HMC.

None of these menus are applicable to the serial ports, or modems attached to those serial ports, on the hardware management console (HMC).

```
     CALL-IN/CALL-OUT SETUP MENU

 1. Modem Configuration Menu

 2. Serial Port Selection Menu

 3. Serial Port Speed Setup Menu

 4. Telephone Number Setup Menu

 5. Call-Out Policy Setup Menu

 6. Customer Account Setup Menu

 7. Call-Out Test
 NOT supported in LPAR mode.
98. Return to Previous Menu

99. Exit from Menus

0>
```

- **Modem Configuration Menu**, see "Modem Configuration Menu" on page 706.
- **Serial Port Selection Menu**, see "Serial Port Selection Menu" on page 707.
- **Serial Port Speed Setup Menu**, see "Serial Port Speed Setup Menu" on page 708.
- **Telephone Number Setup Menu**, see "Telephone Number Setup Menu" on page 708.
- **Call-Out Policy Setup Menu**, see "Call-Out Policy Setup Menu" on page 710.
- **Customer Account Setup Menu**, see "Customer Account Setup Menu" on page 711.
- **Call-Out Test** tests the configuration after the modem is installed and configured correctly.

  Note: If the system is running in partition mode, the call-out option is disabled.

Modem Configuration Menu

Note: This option applies only to a modem attached to serial port 1 (S1) or serial port 2 (S2) on the primary I/O book.

The first two lines of the Modem Configuration Menu contain status of the current selections. Selections are made in the sections labeled Modem Ports and Modem Configuration File Name. Select the serial port that you want to activate and then select the modem configuration file for the modem on the port. If you want to set up all of the serial ports with modems, make your selections one port at a time.

```
        Modem Configuration Menu

   Port 1 Modem Configuration File Name:
   Port 2 Modem Configuration File Name:

To make changes, First select the port and then the configuration file
name

Modem Ports:
   1. Serial port 1
   2. Serial port 2

Modem Configuration File Name:
   5. none9. modem_z_sp
   6. modem_f_sp         10. modem_m1_sp
   7. modem_f0_sp        11. modem_m0_sp
   8. modem_f1_sp        12. modem_m1_sp

  30. Save configuration to NVRAM and Configure modem
  98. Return to Previous Menu

  0>
```

For information on choosing a modem configuration file, see "Sample Modem Configuration Files" on page 935 and "Transfer of a Modem Session" on page 940.

Serial Port Selection Menu

This menu allows you to enable or disable the call-in and call-out functions of each serial port in any combination.

Note: If the system is running in partition mode, call-out is disabled.

```
        Serial Port Selection Menu

  1. Serial Port 1 Call-Out:
     Currently Disabled
   NOT supported in LPAR mode.

  2. Serial Port 2 Call-Out:
        Currently Disabled
   NOT supported in LPAR mode.

  3. Serial Port 1 Call-In:
        Currently Disabled

   4. Serial Port 2 Call-In:
        Currently Disabled
  98. Return to Previous Menu

  0>
```

Call-in and ring indicate power-on cannot be enabled at the same time. If ring-indicate power-on is already enabled and you try to enable call-in, a message prompts you for confirmation. Refer to the message displayed on the screen.

Serial Port Speed Setup Menu

This menu allows you to set serial port speed to enhance terminal performance or to accommodate modem capabilities.

```
      Serial Port Speed Setup Menu

  1. Serial Port 1 Speed:
       Currently 9600

  2. Serial Port 2 Speed:
       Currently 9600

 98. Return to Previous Menu

 0>
```

A serial port speed of 9600 baud or higher is recommended. The following are valid serial port speeds:

50	600	4800
75	1200	7200
110	1800	9600
134	2000	19200
150	2400	38000
300	3600	57600
		115200

Telephone Number Setup Menu

Note: These menus are available, however, the function of calling out to report a system failure is normally handled by the Service Focal Point application running on the HMC.

Use this menu to set or change the telephone numbers for reporting a system failure.

```
      Telephone Number Setup Menu

  1. Service Center Telephone Number:
      Currently Unassigned

  2. Customer Administration Center Telephone Number:
      Currently Unassigned

  3. Digital Pager Telephone Number:
      Currently Unassigned

  4. Customer Voice Telephone Number:
      Currently Unassigned

  5. Customer System Telephone Number:
      Currently Unassigned

 98. Return to Previous Menu

 0>
```

- **Service Center Telephone Number** is the number of the service center computer. The service center usually includes a computer that takes calls from servers with call-out capability. This computer is referred to as the "catcher." The catcher expects messages in a specific format to which the service processor conforms.

For more information about the format and catcher computers, refer to the readme file in the AIX `/usr/samples/syscatch` directory. Contact your service provider for the correct service center telephone number to enter. Until you have that number, leave this field unassigned.

- **Customer Administration Center Telephone Number** is the number of the System Administration Center computer (catcher) that receives problem calls from servers. Contact your system administrator for the correct telephone number to enter here. Until you have that number, leave this field unassigned.

- **Digital Pager Telephone Number** is the number for a numeric pager carried by someone who responds to problem calls from your server. Contact your administration center representative for the correct telephone number to enter. For test purposes, use a test number, which you can change later (see the note on page 721).

Note: If the system is running in partition mode, call-out is disabled. However, if the system is booted in full system partition mode, at least one of the preceding three telephone numbers must be assigned in order for the call-out test to complete successfully.

- **Customer Voice Telephone Number** is the telephone number of a phone near the server or answered by someone responsible for the server. This is the telephone number left on the pager for callback. For test purposes, use a test number, which you can change later.
- **Customer System Telephone Number** is the telephone number to which your server's modem is connected. The service or administrative center representatives need this number to make direct contact with your server for problem investigation. This is also referred to as the *call-in* phone number.

Call-Out Policy Setup Menu

Note: Call-out is disabled in partitioned systems.

Call out settings can be set using the following menu:

```
        CALL-OUT POLICY SETUP MENU

  1. Call-Out policy (First/All):
       Currently First

  2. Remote timeout, (in seconds):
       Currently 120

  3. Remote latency, (in seconds):
       Currently 2

  4. Number of retries:
       Currently 2

 98. Return to Previous Menu

 0>
```

- **Call-Out policy** can be set to `first` or `all`. If call-out policy is set to `first`, the service processor stops at the first successful call-out to one of the following numbers in the order listed:
  1. Service Center
  2. Customer Administrative Center
  3. Pager

  If call-out policy is set to `all`, the service processor attempts a call-out to all of the following numbers in the order listed:
  1. Service Center
  2. Customer Administrative Center
  3. Pager
- **Remote timeout** and **remote latency** are functions of your service provider's catcher computer. Either use the defaults or contact your service provider for recommended settings.
- **Number of retries** is the number of times you want the server to retry calls that failed to complete.

Customer Account Setup Menu

This menu allows users to enter information that is specific to their account.

```
        Customer Account Setup Menu

   1. Customer Account Number:
        Currently Unassigned

   2. Customer RETAIN Login userid:
        Currently Unassigned

   3. Customer RETAIN login password:
        Currently Unassigned

  98. Return to Previous Menu

   0>
```

- **Customer Account Number** is assigned by your service provider for record-keeping and billing. If you have an account number, enter it. Otherwise, leave this field unassigned.
- **Customer RETAIN Login User ID** and **Customer RETAIN Login Password** apply to a service function to which your service provider might have access. Leave these fields unassigned if your service provider does not use RETAIN.

Call-out Test

Call-out test is disabled in partitioned systems.

Service Processor Parameters in Service Mode (Full System Partition)

When the system is in service mode, the following service processor functions are suspended:
- Unattended Start Mode
- Reboot/Restart Policy
- Call-Out
- Surveillance

When service mode is exited, the service processor functions are re-activated.

System Power-On Methods

This section discusses the following system power-on methods:
- Power-on Switch
- Service Processor Menus

  Privileged users can power on the system by selecting the **System Control Power Menu** option from the main menu and then selecting the **Power-on System** option from the System Power Control Menu. General users should select **Power-on System** on the General User Menu.
- Remote Power-on via Ring-Indicate Signal

  The server automatically powers on when it detects a ″ring indicate″ signal from a modem attached to serial port 1 (S1) or serial port 2 (S2).

  A remote user can call the server to activate ring detection by the modem. Listen for a few more rings than the threshold number for starting the system. The system powers on without answering the call.
- Unattended start mode - refer to **Enable/Disable Unattended Start Mode** on page 690.

  The service processor can be enabled to recover from the loss of ac power (see Enable/Disable Unattended Power-On Mode in the SYSTEM POWER CONTROL MENU). When ac power is restored, the system returns to the power state at the time ac loss occurred. For example, if the system was

powered on when ac loss occurred, it reboots/restarts when power is restored. If the system was powered off when ac loss occurred, it remains off when power is restored.

- Timed power-on - refer to the **shutdown -t** command on servers using AIX.

  Working in conjunction with AIX, the Service Processor in your server can operate a timer, much like the wake-up timer on your clock radio. You can set the timer so that your server powers on at a certain time after shutting down. The timer is battery-operated, so power interruptions that occur while the server is off do not affect its accuracy. Refer to the AIX **shutdown -t** command for details on setting the timer.

  Note: If an ac power loss (exceeding the hold-up time of any optional IBFs) is in progress when the timed power-on attempt occurs, the server cannot power on when ac power is restored.

- Follow-up to a Failed Boot Attempt

  The service processor initiates a power-on sequence if a failed boot attempt is detected (due to a hardware or software failure).

- Fast or Slow Boot (IPL)

  Using the service processor menus, you can select the IPL type, mode, and speed of your system.

  Attention: Selecting fast IPL results in several diagnostic tests being skipped and a shorter memory test being run.

Service Processor Reboot/Restart Recovery

Reboot describes bringing the system hardware back up; for example, from a system reset or power-on. The boot process ends when control passes to the operating system process.

Restart describes activating the operating system after the system hardware is reinitialized. Restart must follow a successful reboot.

Boot (IPL) Speed

When the server enters reboot recovery, slow IPL is automatically started, which gives the POST an opportunity to locate and report any problems that might otherwise be unreported.

Failure During Boot Process

During the boot process, either initially after system power-on or upon reboot after a system failure, the service processor monitors the boot progress. If progress stops, the service processor can reinitiate the boot process (reboot) if enabled to do so. The service processor can re-attempt this process according to the number of retries selected in the Reboot/Restart Policy Setup Menu.

Failure During Normal System Operation

When the boot process completes and control transfers to the operating system (OS), the service processor can monitor operating system activity (see the Set Surveillance Parameters option in the SERVICE PROCESSOR SETUP MENU). If OS activity stops due to a hardware- or software-induced failure, the service processor can initiate a reboot/restart process based on the settings in the Service Processor Reboot/Restart Policy Setup Menu and the OS automatic restart settings (see the operating system documentation).

If you are using the AIX operating system, the menu item under SMIT for setting the restart policy is **Automatically Reboot After Crash**. The default is false. When the setting is true, and if the service processor parameter ″Use OS-Defined Restart Policy″ is yes (the default), the service processor takes over for AIX to reboot/restart after a hardware or surveillance failure.

Service Processor Reboot/Restart Policy Controls

The operating system's automatic restart policy (see operating system documentation) indicates the operating system response to a system crash. The service processor can be instructed to refer to that policy by the Use OS-Defined Restart Policy setup menu.

If the operating system has no automatic restart policy, or if it is disabled, then the service processor-restart policy can be controlled from the service processor menus. Use the Enable Supplemental Restart Policy selection.

Use OS-Defined restart policy - The default setting is no. If set to yes on a full system partition, this causes the service processor to refer to the OS Automatic Restart Policy setting and take action (the same action the operating system would take if it could have responded to the problem causing the restart).

When this setting is no, or if the operating system did not set a policy, the service processor refers to enable supplemental restart policy for its action.

This setting is ignored on a partitioned system.

Enable supplemental restart policy - The default setting is yes. When set to yes on a full system partition, the service processor restarts the server when the operating system loses control and either:

The **Use OS-Defined restart policy** is set to No.

OR

The **Use OS-Defined restart policy** is set to Yes and the operating system has no automatic restart policy.

If set to Yes on a partitioned system, the service processor restarts the system when the system loses control and it is detected by service processor surveillance.

Refer to "Service Processor Reboot/Restart Recovery" on page 713.

The following table describes the relationship among the operating system and service processor restart controls in a full system partition.

OS Automatic reboot/restart after crash setting	Service processor to use OS-Defined restart policy?	Service Processor Enable supplemental restart policy?	System response
None	No[1]	No	
None	No[1]	Yes[1]	Restarts
None	Yes	No	
None	Yes	Yes[1]	Restarts
False[2]	No[1]	No	
False[2]	No[1]	Yes[1]	Restarts
False[2]	Yes	No	
False[2]	Yes	Yes[1]	
True	No[1]	No	
True	No[1]	Yes[1]	Restarts
True	Yes	No	Restarts
True	Yes	Yes[1]	Restarts

[1] Service processor default
[2] AIX default

In a partitioned system, the service processor's supplemental restart policy is the only setting that is used, as shown in the following table:

Service Processor enable supplemental restart policy	System Response
No	
Yes (default)	Restarts

System Firmware Updates

Attention: If the firmware on the system is RH021025 or later, the firmware can be updated to the latest level by the customer. If it is RH021024 or earlier, the firmware must be updated by a service representative.

To determine the current level of firmware on the system, see "Determining the Level of Firmware on the System" on page 715.

This section provides information and instructions for updating the system firmware. You may need to perform these steps if you are installing an option or if your support representative has requested that you update your firmware.

If you cannot download from the Web, do the following:

- If the service processor programming has been damaged, the service processor will automatically enter recovery mode when power is applied to the system.

To check the level of firmware that is currently on the system, see "Determining the Level of Firmware on the System".

General Information on System Firmware Updates

All the system firmware types that can be reprogrammed are updated at the same time. They are:

- System power control network programming
- Service processor programming
- IPL programming
- Run-time abstraction services

Retain and store the latest firmware diskettes each time the firmware gets updated in the event that the firmware becomes damaged and must be reloaded.

Determining the Level of Firmware on the System

The firmware level can be denoted in either of the following forms:

- RHyymmdd, where RH = the 406/70's firmware designation, yy = year, mm = month, and dd = day of the release.
- vHyymmdd, where v = version number, H= the 406/70's firmware designation, yy = year, mm = month and dd = day of the release.

If your system is running AIX, the platform firmware level can be determined by either of the following methods:

- On the AIX command line, by typing:

  `lscfg -vp|grep -p Platform`

  A line that begins with `ROM level (alterable)..` displays the firmware level that is currently on the system.
- Looking at the top of the service processor main menu.

If the system is running Linux, the platform firmware level can be determined by any one of the following methods:

- If the system was installed prior to May of 2003, and has not had a firmware update in May 2003 or later, type the following on the Linux command line:

  `/usr/sbin/ibmras/nvram --print-vpd | grep RH`
- If the system was installed in May of 2003 or later, or the system has firmware on it that was released in May 2003 or later, type the following on the Linux command line:

  `/usr/sbin/ibmras/nvram --print-vpd | grep 3H`

  A line similar to `Alterable ROM Level RH021114` or `Alterable ROM Level 3H030509` displays the firmware level that is currently on the system.
- Looking at the top of the service processor menu main menu.

System Firmware Update in AIX Using a Locally Available Image

To update the system firmware using a locally available image, perform the following steps:

1. Log in as root user.

2. If the **/tmp/fwupdate** directory does not exist, create it by issuing the following command:

   ```
   mkdir /tmp/fwupdate
   ```

3. The firmware update file must be downloaded or copied into the **/tmp/fwupdate** directory on the system. This can be done by using the **ftp** command to get the image from an ftp server or NFS-mounting the directory on the host system.

   The firmware updated file can also be transferred to the target system by backing up the image onto diskettes from another server and restoring it into the **/tmp/fwupdate** directory.

   After the firmware update file has been downloaded or copied into the **/tmp/fwupdate** directory, verify its existence by entering either of the following commands, depending on the name of the update image:

   ```
   ls /tmp/fwupdate/RH*.img
   ```

   or

   ```
   ls /tmp/fwupdate/3H*.img
   ```

   The update file will have either the RHyymmdd.img format or the 3Hyymmdd.img format. In both cases, the Hin the second position indicates that this is an update image for your system; yy is the year, mm is the month, and dd is the day of the update file.

4. After the update file has been written to the **/tmp/fwupdate** directory, enter the following commands:

   ```
   cd /usr/lpp/diagnostics/bin
   ```

   then either of these commands, depending on the name of the update file:

   ```
   ./update_flash -f /tmp/fwupdate/RHyymmdd.img
   ```

   or

   ```
   ./update_flash -f /tmp/fwupdate/3Hyymmdd.img
   ```

   Attention: Do not overlook the periods (.) in the commands shown above. AIX commands are case-sensitive. Type them exactly as shown.

You will be asked for confirmation to proceed with the firmware update and the required reboot. If you confirm, the system will apply the new firmware, reboot, and return to the AIX prompt. This may take up to ten minutes depending on the configuration of the system.

Attention: On some systems, the message `Wait for rebooting before stopping` may display on the system console. Do not turn off the system until the system has fully rebooted to the AIX login prompt. If a shutdown is necessary at that time, log in as root user and issue the **shutdown** command.

While the update is in progress, you will see `Rebooting...` on the display for several minutes.

The firmware update is complete.

Recovery Mode

Contact your marketing representative for information about obtaining and installing system firmware update packages.

The eight-digit codes are as follows:

Code	Action
A1FD 0000	System firmware has been damaged and must be reflashed.
A1FD 0001	Insert update diskette 1.
A1FD 0002	Insert update diskette 2.
A1FD 0003	Insert update diskette 3.
A1FD 000n	Insert update diskette n.

Notes:

1. If the wrong diskette is inserted at any time, or if the diskette is left in the drive after it has been read, `B1FD 001F` is displayed, indicating that the wrong diskette is in the drive.

2. If `B1FD 001A` is displayed at any time during the process, the service processor must be reset by activating the pinhole reset switch on the operator panel.

After the update process is complete, the service processor resets itself and goes through a complete reboot.

Configuring and Deconfiguring Processors or Memory

All failures that crash the system with a machine check or check stop, even if intermittent, are reported as a diagnostic callout for service repair. To prevent the recurrence of intermittent problems and improve the availability of the system until a scheduled maintenance window, processors and memory books with a failure history are marked ″bad″ to prevent their being configured on subsequent boots.

A processor or memory book is marked ″bad″ under the following circumstances:

* A processor or memory book fails built-in self-test (BIST) or power-on self-test (POST) testing during boot (as determined by the service processor).
* A processor or memory book causes a machine check or check stop during runtime, and the failure can be isolated specifically to that processor or memory book (as determined by the processor runtime diagnostics in the service processor).
* A processor or memory book reaches a threshold of recovered failures that results in a predictive callout (as determined by the processor run-time diagnostics in the service processor).

During boot time, the service processor does not configure processors or memory books that are marked "bad."

If a processor or memory book is deconfigured, the processor or memory book remains offline for subsequent reboots until it is replaced or repeat gard is disabled. The repeat gard function also provides the user with the option of manually deconfiguring a processor or memory book, or re-enabling a previously deconfigured processor or memory book. For information on configuring or deconfiguring a processor, see the Processor Configuration/Deconfiguration Menu on page 695.

For information on configuring or deconfiguring a memory book, see the Memory Configuration/Deconfiguration Menu on page 696. Both of these menus are submenus under the System Information Menu.

You can enable or disable CPU Repeat Gard or Memory Repeat Gard using the Processor Configuration/Deconfiguration Menu.

Run-Time CPU Deconfiguration (CPU Gard)

L1 instruction cache recoverable errors, L1 data cache correctable errors, and L2 cache correctable errors are monitored by the processor runtime diagnostics (PRD) code running in the service processor. When a predefined error threshold is met, an error log with warning severity and threshold exceeded status is returned to AIX. At the same time, PRD marks the CPU for deconfiguration at the next boot. AIX will attempt to migrate all resources associated with that processor to another processor and then stop the defective processor.

Service Processor System Monitoring - Surveillance

Surveillance is a function in which the service processor monitors the system, and the system monitors the service processor. This monitoring is accomplished by periodic samplings called *heartbeats*.

Surveillance is available during two phases:

* System firmware bringup (automatic)
* Operating system runtime (optional)

Note: Operating system surveillance is disabled on partitioned systems.

System Firmware Surveillance

System firmware surveillance is automatically enabled during system power-on. It cannot be disabled by the user, and the surveillance interval and surveillance delay cannot be changed by the user.

If the service processor detects no heartbeats during system IPL (for a set period of time), it cycles the system power to attempt a reboot. The maximum number of retries is set from the service processor menus. If the fail condition persists, the service processor leaves the machine powered on, logs an error, and displays menus to the user. If Call-out is enabled, the service processor calls to report the failure and displays the operating-system surveillance failure code on the operator panel.

Operating System Surveillance

Note: Operating system surveillance is disabled in partitioned systems.

Operating system surveillance provides the service processor with a means to detect hang conditions, as well as hardware or software failures, while the operating system is running. It also provides the operating system with a means to detect a service processor failure caused by the lack of a return heartbeat.

Operating system surveillance is not enabled by default, allowing you to run operating systems that do not support this service processor option.

You can also use service processor menus and AIX service aids to enable or disable operating system surveillance.

For operating system surveillance to work correctly, you must set these parameters:
* Surveillance enable/disable
* Surveillance interval

  The maximum time the service processor should wait for a heartbeat from the operating system before timeout.
* Surveillance delay

  The length of time to wait from the time the operating system is started to when the first heartbeat is expected.

Surveillance does not take effect until the next time the operating system is started after the parameters have been set.

If desired, you can initiate surveillance mode immediately from service aids. In addition to the three options above, a fourth option allows you to select immediate surveillance, and rebooting of the system is not necessarily required.

If operating system surveillance is enabled (and system firmware has passed control to the operating system), and the service processor does not detect any heartbeats from the operating system, the service processor assumes the system is hung and takes action according to the reboot/restart policy settings. See "Service Processor Reboot/Restart Recovery" on page 713.

If surveillance is selected from the service processor menus that are only available at system boot, then surveillance is enabled by default as soon as the system boots. From service aids, the selection is optional.

Call-Out (Call-Home)

Note: Call-out is disabled on partitioned systems. The call-out function is handled by the Service Focal Point application on the Hardware Management Console (HMC).

The service processor can call out (call-home) when it detects one of the following conditions:

- System firmware surveillance failure
- Operating system surveillance failure (if supported by operating system)
- Restarts
- Critical hardware failure
- Abnormal operating system termination

To enable the call-out feature, do the following:

1. Connect a modem to any serial port.
2. Set up the following using the service processor menus or diagnostic service aids:
    - Enable call-out for the serial port where the modem is connected.
    - Enter the modem configuration file name.
    - Set up site-specific parameters (phone numbers for call-out, call-out policy, number of call-out retries, and so on).
3. To call out before restart, set **Call-out before restart** to ENABLED from the Reboot/Restart Policy Setup menu.

Note: Some modems, are not designed for the paging function. Although they can be used for paging, they will return an error message when they do not get the expected response from another modem. Therefore, even though the paging was successful, the error message will cause the service processor to retry, continuing to place pager calls for the number of retries specified in the call-out policy setup menu. These retries result in redundant pages.

Console Mirroring

Console mirroring allows a user on one serial port to monitor the service processor activities on another serial port. This can be done on the locally attached HMC virtual terminal window or windows remotely attached through modems. Console mirroring is supported on any combination of locally or remotely attached monitors.

The serial port from which console mirroring is enabled is called the *primary port*. The mirror port is determined when keyboard input is detected from one of the other two serial ports. From this point forward, the service processor sends information to the active port and the mirror port only. Console mirroring ends when the service processor releases control of the serial ports to the system firmware.

Console mirroring is supported on serial port 1 (S1), serial port 2 (S2), and serial port 3 (S3). Remote attachment through a modem is supported on serial port 1 (S1) and serial port 2 (S2).

System Configuration

The following describes the configuration for console mirroring:
- Service processor
- Modem connected to one serial port and enabled for incoming calls
- Local HMC virtual terminal window connected to the other serial port. This local terminal can be connected directly to your server or connected through another modem.

Console mirroring can be started by either of the following methods:
- Remote session first, then local session added:
  1. Remote session is already in progress.
  2. Remote user uses service processor menus to enable console mirroring, allowing both consoles to be active.
- Local session first, then remote session added:
  1. Local session is already in progress.
  2. The service processor receives a call from the remote user.
  3. The local user selects the option to enable console mirroring. The service processor immediately begins mirroring service processor menus.

Service Processor Error Logs

The service processor error logs, an example of which follows, contain error conditions detected by the service processor.

```
                    Error Log

1. 11/30/99    19:41:56 Service Processor Firmware Failure
   B1004999

   Enter error number for more details.
   Press Return to continue, or 'x' to return to menu.
     Press "C" to clear error log, any other key to continue. >
```

Note: The time stamp in this error log is coordinated universal time (UTC), which is also referred to as Greenwich mean time (GMT). Operating system error logs have additional information available and can time stamp with local time.

Entering an error number provides nine words of system reference code (SRC) data; an example screen is shown below.

```
Detail:    6005

SRC
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
word11:B1004999      word12:0110005D      word13:00000000
word14:00000000      word15:00001111      word16:00000000
word17:B1004AAA      word18:0114005D      word19:A4F1E909

B1004999

   Press Return to continue, or 'x' to return to menu.
```

If Return is pressed, the contents of NVRAM will be dumped 320 bytes at a time, starting at address 0000.

LCD Progress Indicator Log

The following is an example of the LCD progress indicator log. It shows the types of entries that may appear in the log, and is for example purposes only.

The progress indicator codes are listed from top (latest) to bottom (oldest).

```
                  LCD Progress Indicator Log
          B0FF
          0539..17
          0538..17
          0539..17
          0538..17
          0539..17
          0581
          0538..17
          0539..12
          0538..12
          0539..
          0821..01-K1-00
          0539..
          0728..01-R1-00-00
          0539..
          0664..40-60-00-1,0
          0539..
          0777..U1.5-P1-I14/E1
          0539..
          0742..U1.5-P1-I12/E1
          0539..
          0776..U1.5-P1-I10/T1
          E139
          E1FB
          E139
          E183
Press Return to continue, or 'x' to return to menu. >
          EAA1..U1.9-P1-I14
          E172..U1.9-P1
          E172..U1.9-P1-I14
          E172..U1.9-P1
          94BB
          9109
          9380
          9108
          9107
          9106
          9105
          9118
          9104
          9103
          9102
          90FD
```

Resetting the Service Processor

Some error conditions might cause the service processor to hang. The service processor must be reset to recover from a hung condition. If the system is powered on, resetting the service processor will cause the system to shut down. When the service processor is reset, it carries out its power-on sequence, including self-tests. Successful completion of the reset sequence is indicated by OK in the operator panel in the media drawer.

Before resetting the service processor, if the managed system is powered on and running, shut down all partitions, or the full system partition. This action causes the system to shut down and the system power is turned off.

To reset the service processor when the managed system is powered off, perform either of the following:

- If the service processor is responding to input from the HMC (or ASCII terminal), select **Service Processor Setup Menu** from the main menu, then select **Reset Service Processor**. This can only be done by a privileged user.
- Put the UEPO switch in the off position, then back to the on position.

Note: Do *not* use the pinhole reset switch to reset the service processor.

Service Processor Operational Phases

This section provides a high-level flow of the phases of the service processor.

SP Power Applied

Pre-Standby Phase

Standby Phase   SP Menus Available

Bring-Up Phase   SMS Menus Available

Run-time Phase   Operating System Login Prompt Available
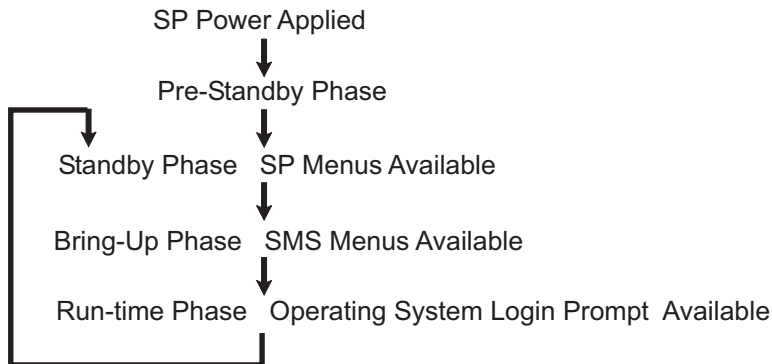
Pre-Standby Phase

This phase is entered when the server is connected to a power source. The server may or may not be fully powered on. This phase is exited when the power-on self-tests (POSTs) and configurations tasks are completed.

The pre-standby phase components are:

- Service Processor Initialization - service processor performs any necessary hardware and software initialization.
- Service Processor POST - service processor conducts power-on self-tests on its various work and code areas.
- Service Processor Unattended Start Mode Checks - To assist fault recovery. If unattended start mode is set, the service processor automatically reboots the server. The service processor does not wait for user input or power-on command, but moves through the phase and into the bring-up phase. Access the SMS menus or the service processor menus to reset the unattended start mode.

Standby Phase

The standby phase can be reached in either of two ways:

* With the server off and power connected (the normal path), recognized by `OK` in the LCD display.

    OR

* With the server on after an operating system fault, recognized by an 8-digit code in the LCD display.

In the standby phase, the service processor takes care of some automatic duties and is available for menus operation. The service processor remains in the standby phase until a power-on request is detected.

The standby phase components are as follows:

* Modem Configuration

    The service processor configures the modem (if installed) so that incoming calls can be received, or outgoing calls can be placed.

* Dial In

    Monitor incoming phone line to answer calls, prompt for a password, verify the password, and remotely display the standby menu. The remote session can be mirrored on the local HMC virtual terminal window if the server is so equipped and if the user enables this function.

* Menus

    The service processor menus are password-protected. Before you can access them, you need either the general user-password or privileged-user password.

    Service processor menus are available on ASCII terminals attached to the serial ports on the primary I/O book, and on terminal emulators. On HMC-managed systems, service processor menus are also available on the HMC graphical user interface.

Bring-Up Phase

On a system that is powered-on to full system partition, this phase is entered upon power-on, and exited upon loading of the operating system.

On a system that is powered-on to partition standby, this phase is entered upon power-on, and exited when the partition manager and hypervisor have been loaded and become fully operational in system memory. The end of this phase is indicated when `LPAR` displays on the operator panel. At this point, the server can start multiple logical partitions which would be activated through the HMC graphical user interface.

The bring-up phase components are as follows:

* Retry Request Check

    The service processor checks to see if the previous boot attempt failed. If the specified number of failures are detected, the service processor displays an error code and places an outgoing call to notify an external party if the user has enabled this option.

* Dial Out

    The service processor can dial a preprogrammed telephone number in the event of an IPL failure. The service processor issues an error report with the last reported IPL status indicated and any other available error information.

* Update Operator Panel

    The service processor displays operator panel data on the HMC virtual terminal window if a remote connection is active.

* Environmental Monitoring

    The service processor provides expanded error recording and reporting.

* System Firmware Surveillance (Heartbeat Monitoring)

The service processor monitors and times the interval between system firmware heartbeats.

- Responding to System Processor Commands

  The service processor responds to any command issued by the system processor.

Run-Time Phase

This phase includes the tasks that the service processor performs during steady-state execution of the operating system.

- Environmental Monitoring

  The service processor monitors voltages, temperatures, and fan speeds (on some servers).

- Responding to System Processor Commands

  The service processor responds to any command issued by the system processor.

- Run-Time Surveillance (not supported on partitioned systems)

  If the device driver is installed and surveillance enabled, the service processor monitors the system heartbeat. If the heartbeat times out, the service processor places an outgoing call. This is different from the bring-up phase scenario, where the specified number of reboot attempts are made before placing an outgoing call.

- HMC surveillance

  On an HMC-managed system, the service processor monitors the communication link between the managed system and the HMC. If the service processor detects that this communication link has been broken, it will post an error to the operating system running on the managed system.

Chapter 8. Using System Management Services

Use the system management services menus to view information about your system or partition, and to perform tasks such as setting a password, changing the boot list, and setting the network parameters.

Notes:

1. On some of the system management services (or service processor) screens, you will see the term *LPAR*. LPAR is equivalent to the term *logically partitioned system* or *partitioned system*.

2. In a partitioned system, only those devices that are assigned to the partition that is being booted display in the SMS menus. In a full system partition, all devices in the system display in the SMS menus.

To start the system management services, do the following:

1. For a partitioned system, use the Hardware Management Console (HMC) to restart the partition.

   For a full system partition, restart the system.

2. For a partitioned system, watch the virtual terminal window on the HMC.

   For a full system partition, watch the firmware console.

3. Look for the POST indicators **memory, keyboard, network, scsi, speaker**, which appear across the bottom of the screen. Press the numeric 1 key after the word **keyboard** appears, and before the word **speaker** appears.

   For more information on the POST indicator words, refer to "POST Indicators" on page 12.

After the text-based System Management Services starts, the following screen displays.

```
Main Menu

  1   Select Language
  2   Change Password Options (NOT available in LPAR mode)
  3   View Error Log
  4   Setup Remote IPL (Initial Program Load)
  5   Change SCSI Settings
  6   Select Console (NOT available in LPAR mode)
  7   Select Boot Options



-------------------------------------------------------------------------------------------
Navigation keys:

                                                        X = eXit System Management Services
-------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Note: The System Management Services menus can also be started using the Service Processor Boot Mode Menu. See page 693.

On all menus except the Main Menu, there are several navigation keys:

M   Return to the main menu.

ESC   Return to the previous menu.

X   Exit the System Management Services and start the operating system.

   If X is entered, you are asked to confirm your choice to exit the SMS menus and start the operating system.

When there is more than one page of information to display, the following additional navigation keys display:

N   Display the next page of the list.

P   Display the next page of the list.

Note: The lowercase navigation key has the same effect as the uppercase key that is shown on the screen. For example, either *m* or *M* returns you to the main menu.

On each menu screen, you can choose either a menu item and press Enter (if applicable), or select a navigation key.

Select Language

Note: Your TTY must support the ISO-8859 character set to properly display languages other than English.

This option allows you to change the language used by the text-based System Management Services menus.

```
 SELECT LANGUAGE

   1.  English
   2.  Francais
   3.  Deutsch
   4.  Italiano
   5.  Espanol




 -------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                    X = eXit System Management Services
 -------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Password Utilities

Note: This option is disabled in partitioned systems.

The Password Utilities menu enables you to select from password utilities.

```
Password Utilities

 1 Set Privileged-Access Password
 2 Remove Privileged-Access Password



 -------------------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                          X = eXit System Management Services
 -------------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Set Privileged-Access Password

The privileged–access password protects against the unauthorized starting of the system programs.

Note: If the privileged–access password has been enabled, you are asked for the privileged–access password at startup every time you boot your system.

If you previously had set a privileged–access password and want to remove it, select **Remove Privileged-Access Password**.

View Error Log

Use this option to view or clear your system's error log. A menu similar to the following displays when you select this option.

```
 Error Log

         Date        Time       Error Code      Location
 Entry 1. 01/04/96   12:13:22   25A80011        00-00
 Entry 2. no error logged

1. Clear error log



 -------------------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                          X = eXit System Management Services
 -------------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Note: The time stamp in this error log is coordinated universal time (UTC), which is also referred to as Greenwich mean time (GMT). Operating system error logs have more information available and can time stamp with your local time.

Setup Remote IPL (Initial Program Load)

This option allows you to enable and set up the remote startup capability of your system or partition. A list of NIC (network interface card) adapters in the system displays first. An example of this screen is shown below:

Attention: In a partitioned system, only those network adapters that have been assigned to the partition being booted display in the IP Parameters menu. In a full system partition, all network adapters in the system are listed in the adapter parameters menu.

```
NIC Adapters
         Device                    Slot          Hardware Address
1.    10/100 Mbps Ethernet PCI Adapt    U1.9-P1-I4/E1    00096baeac10
2.    IBM 10/100/1000 Base-TX PCI       U1.5-P2-I3/T1    0009cbce0fde



-----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                    X = eXit System Management Services
-----------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

When an adapter is selected, the network parameters menu displays:

```
Network Parameters
10/100 Mbps Ethernet PCI Adapter II:  U1.9-P1-I4/E1
 1. IP Parameters
 2. Adapter Parameters
 3. Ping Test



-----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                    X = eXit System Management Services
-----------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting the IP (Internet Protocol) parameters option displays the following menu:

```
IP Parameters
10/100 Mbps Ethernet PCI Adapter II:  U1.9-P1-I4/E1
 1. Client IP Address     [000.000.000.000]
 2. Server IP Address     [000.000.000.000]
 3. Gateway IP Address    [000.000.000.000]
 4. Subnet Mask           [255.255.255.000]




-----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                    X = eXit System Management Services
-----------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

To change IP parameters, type the number of the parameters for which you want to change the value. Entering IP parameters on this screen will automatically update the parameters on the ping test screen.

Attention: If the client system and the server are on the same subnet, set the gateway IP address to [0.0.0.0].

Selecting the **Adapter Configuration**allows the setting of the network speed, enabling or disabling spanning tree, and setting the protocol as shown in the example menu below:

```
 Adapter Configureation
 10/100 Mbps Ethernet PCI Adapter II:  U1.9-P1-I4/E1
1.  Speed, Duplex
2.  Spanning Tree Enabled
3.  Protocol




 -----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                          X = eXit System Management Services
 -----------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting the **Speed, Duplex** option allows you to set the interface speed at which the card will run and half versus full duplex. The current setting is indicated by ″<===″.

```
Adapter Configuration
10/100 Mbps Ethernet PCI Adapter II:  U1.9-P1-I4/E1

1.  auto, auto
2.  10,half
3.  10,full
4.  100,half
5.  100,full




 -----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                          X = eXit System Management Services
 -----------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting the **Spanning Tree Enabled** menu allows you to enable or disable the spanning tree flag. If this flag is enabled (because the network the system is being attached to supports spanning trees), the firmware will impose a waiting period of 60 seconds before the adapter is allowed to communicate with the network. If this flag is disabled, the network adapter will be able to access the network immediately after the system is connected.

```
Spanning Tree Enabled
10/100 Mbps Ethernet PCI Adapter II:  U1.9-P1-I4/E1

1.  Yes  <===
2.  No




-------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                     X = eXit System Management Services
-------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

The **Protocol** option allows you to set the appropriate protocol for your network as shown below.

```
Protocol
10/100 Mbps Ethernet PCI Adapter II:  U1.9-P1-I4/E1

 1. Standard  <===
 2. IEEE802.3




-------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                     X = eXit System Management Services
-------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Select the **ping test** option from the network parameters menu to test an adapter's network connection to a remote system. After the ping test option is selected, the same series of screens will take you through setting up the IP parameters and the adapter configuration before attempting the ping test.

Notes:

1. Once the ping test is initiated, it may take 60 seconds or longer to return a result.
2. If the ping test passes or fails, the firmware will stop and wait for a key to be pressed before continuing.

Change SCSI Settings

This option allow you to view and change the addresses of the SCSI controllers attached to your system.

```
SCSI Utilities

  1. Hardware Spin Up Delay
  2. Change SCSI Id




-------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                    X = eXit System Management Services
-------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Select Console

Note: This option is disabled in partitioned systems.

The Select Console option allows the user to select the console to use to display the SMS menus. This selection is valid only for the SMS menus and does not affect the display used by the operating system.

Follow the instructions that display on the screen. The firmware automatically returns to the SMS main menu.

Select Boot Options

Use this menu to view and set various options regarding the installation devices and boot devices.

```
Boot Options

  1. Select Install or Boot a Device
  2. Select Boot Devices
  3. Multiboot Startup




 -------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                      X = eXit System Management Services
 -------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

The Boot Options menu contains the following options:
- **Select Install or Boot a Device** allows you to select a device to boot from or to install the operating system from. This selection is for the current boot only.
- **Select Boot Devices** allows you to set the boot list.
- **Multiboot Startup** toggles the multiboot startup flag, which controls whether the multiboot menu is invoked automatically on startup.

If **Diskette** is selected from **Select Install of Boot a Device**, the following menu is displayed:

```
  Select Device Type
  1.  Diskette
  2.  Tape
  3.  CD/DVD
  4.  IDE
  5.  Hard Drive
  6.  Network
  7.  None
  8.  List All Devices




  --------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                      X = eXit System Management Services
  --------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

If a device is selected that does not reside in the system, a menu with the following message displays:

```
THE SELECTED DEVICES WERE NOT DETECTED IN THE SYSTEM!
Press any key to continue.
```

If **Hard Drive** is selected from **Select Install of Boot a Device**, the following menu displays:

```
  Select Hard Drive Type
  1.  SCSI
  2.  SSA
  3.  SAN
  4.  None
  5.  List All Devices




  ---------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                      X = eXit System Management Services
  ---------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

If **List All Devices** is selected from **Select Install of Boot a Device**, a menu similar to the following displays, depending on the devices that are installed in the system:

```
 Select Device
Device  Current  Device
Number  Position  Name
 1.       1        SCSI 18200 MB Harddisk (loc=U1.9-P2/Z1-A8,0)
 2.       -        SCSI 18200 MB Harddisk (loc=U1.9-P2/Z1-A9,0)
 3.       -        SCSI 18200 MB Harddisk (loc=U1.9-P2/Z1-Aa,0)
 4.   None
 5.   List all devices



 ----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                    X = eXit System Management Services
 ----------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

The appropriate device can then be selected for this boot or installation.

When a device is selected for installing the operating system, or to boot from, the Select Task menu allows you to get more information about the device, or to boot from that device in normal mode or service mode. The following is an example of this menu.

```
 Select Task

SCSI 18200 MB Harddisk (loc=U1.9-P2/Z1-A8,0)

 1.   Information
 2.   Normal Mode Boot
 3.   Service Mode Boot



 ----------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                    X = eXit System Management Services
 ----------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

If either **Normal Mode Boot** or **Service Mode Boot** is selected, the next screen requests confirmation. If you answer yes, the device will be booted in the appropriate mode. If you answer no, the firmware will return to the Select Task menu.

Select Boot Devices

Select this option to view and change the customized boot list, which is the sequence of devices read at startup.

```
 Configure Boot Device Order
 1.  Select 1st Boot Device
 2.  Select 2nd Boot Device
 3.  Select 3rd Boot Device
 4.  Select 4th Boot Device
 5.  Select 5th Boot Device
 6.  Display Current Setting
 7.  Restore Default Setting



 ------------------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                    X = eXit System Management Services
 ------------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

When any of the Boot Device options are selected, the Select Device Type screen displays, which will be similar to the following.

```
 Select Device Type
 1.  Diskette
 2.  Tape
 3.  CD/DVD
 4.  IDE
 5.  Hard Drive
 6.  Network
 7.  None
 8.  List All Devices



 ------------------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                    X = eXit System Management Services
 ------------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

When a device type is selected, the Select Task menu displays, similar to the following:

```
 Select Task

SCSI 18200 MB Harddisk (loc=U1.9-P2/Z1-A8,0)

 1.  Information
 2.  Set Boot Sequence: Configure as 1st Boot Device




 -------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                     X = eXit System Management Services
 -------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

Selecting **Information** displays a menu similar to the following for a hard disk.

```
 Device Information
    /pci@3fffdf0a000/pci@2,4/scsi@1/sd@8,0
                  : (Integrated)    (Bootable)
DEVICE            : SCSI 18200 MB Harddisk (U1.9-P2/Z1-A8,0)
NAME              : sd
DEVICE-TYPE       : block




 -------------------------------------------------------------------------------------------
Navigation keys:
M = return to main menu
ESC key = return to previous screen                     X = eXit System Management Services
 -------------------------------------------------------------------------------------------
Type the number of the menu item and press Enter or Select a Navigation key: _
```

The **Set Boot Sequence** option allows you to set the location of the device in the boot list.

Display Current Settings

This option displays the current setting of the customized boot list. An example of this menu, with one device in the boot list, follows.

```
 Current Boot Sequence
 1.  SCSI 18200 MB Harddisk (loc=U1.9-P2/Z1-A8,0)
 2.    None
 3.    None
 4.    None
 5.    None




 ------------------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                    X = eXit System Management Services
 ------------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Restore Default Settings

This option restores the boot list to the default boot list. The default boot list will vary, depending on the devices that are installed in the system.

```
 The default boot list is:

 1.  Primary diskette drive (if installed)
 2.  CD-ROM drive (if installed)
 3.  Tape drive (in installed)
 4.  Hard disk drive (if installed)
 5.  Network adapter



 ------------------------------------------------------------------------------------------------
 Navigation keys:
 M = return to main menu
 ESC key = return to previous screen                    X = eXit System Management Services
 ------------------------------------------------------------------------------------------------
 Type the number of the menu item and press Enter or Select a Navigation key: _
```

Multiboot Startup

The Multiboot Startup option controls whether the multiboot menu is invoked automatically on startup.

Exiting System Management Services

After you have finished using the system management services, type **x** (for exit) at the Utilities menu to boot your system or partition. On all other screens, typing **x** returns you to the previous screen.

Chapter 9. Removal and Replacement Procedures

Introduction

Before performing any of the removal or replacement procedures in this chapter, read the following notices.

DANGER

> **An electrical outlet that is not correctly wired could place hazardous voltage on 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.**
>
> **Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.**
>
> **During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communications lines.**
> D06

CAUTION:
This product is equipped with a three-wire power cable and plug for the user's safety. Use this power cable with a properly grounded electrical outlet to avoid electrical shock.
C01

CAUTION:
This unit has more than one power supply cord. To reduce the risk of electrical shock, disconnect two power supply cords before servicing.
C21

Handling Static-Sensitive Devices

Attention: Disk drives, tape drives, and CD-ROM drives are sensitive to static electricity discharge. These devices are shipped in antistatic containers to prevent damage caused by electrostatic discharge.

Take the following precautions:
- If you have an antistatic wrist strap available, use it while handling the device.
- Do not remove the device from the antistatic container until you are ready to install the device in the system unit.
- With the device still in its antistatic container, touch it to a metal frame of the system.
- Grasp cards and boards by the edges. Hold drives by the frame. Avoid touching the solder joints or pins.
- If you need to lay the device down while it is out of the antistatic container, lay it on the antistatic container. Before picking it up again, touch the antistatic container and the metal frame of the system unit at the same time.
- Handle the devices carefully in order to prevent permanent damage.

Powering Off and Powering On the System

This section provides procedures for powering off and powering on the system. If you are instructed to remove the power from the system, the power cords must be disconnected from the power source.

Powering Off the System With an HMC Attached and AIX Installed

The HMC user interface provides a power-off function to turn off the power to the system. If the system is logically partitioned, AIX in each partition may be stopped individually to make repairs. If the system power must be turned off, all of the logical partitions must be stopped. AIX provides hot-swap procedures for adapters and devices that support hot-swap removal and installation. You do not have to shutdown a partition that controls an adapter or device that supports hot-swap. Individual power components and fans may be serviced with power on for power systems equipped with redundant power and cooling. Check removal and installation procedures before servicing the system.

As the system goes off, the power LED on the operator panel starts blinking at a fast rate. B0FF appears in the primary operator panel display.

When the power-off sequence is complete, the system goes into Standby mode, as evidenced by the following:
- OK message displays in the operator panel display.
- The operator-panel LED will start blinking at a slow rate.
- The processor subsystem power LED will start blinking at a slow rate.

To completely remove power from the system, turn off the UEPO switch, turn off the circuit breakers on all optional IBF subsystems (if provided), then disconnect both power cords from the customer's receptacle.

If the system is operating in a full system partition under AIX, typing the **shutdown** command causes the system to shut down and power off. The **-F** flag shuts down the system without warning system users. Check with the system administrator before using this command. If you cannot use this method, you can power off the system by pressing the power button on the operator panel or the appropriate command at the HMC.

Attention: Using the power button on the operator panel or commands at the HMC to power off the system can cause unpredictable results in the data files. The next IPL will also take longer to complete if all applications in all partitions are not stopped before hand.

Powering Off the System With an HMC Attached and Linux Installed

The HMC user interface provides a power-off function to turn off the power to the system. If the system is logically partitioned, Linux may be stopped individually in each partition to make repairs. If the system power must be turned off, all of the logical partitions must be stopped. Linux does not provide hot-swap procedures for adapter and device removal and installation. You must shutdown all partitions and the system power must be turned off to service an adapter or device. Individual power components and fans may be serviced with power on for power systems equipped with redundant power and cooling. Check removal and installation procedures before servicing this system.

As the system goes off, the power LED on the operator panel starts blinking at a fast rate. `B0FF` appears in the primary operator panel display.

When the power-off sequence is complete, the system goes into Standby mode, as evidenced by the following:
* `OK` message displays in the operator panel display.
* The operator-panel LED will start blinking at a slow rate.
* The processor subsystem power LED will start blinking at a slow rate.

To completely remove power from the system, turn off the UEPO switch, turn off the circuit breakers on all optional IBF subsystems (if provided), then disconnect both power cords from the customer's receptacle.

If the system is operating in a full system partition under Linux, typing the **shutdown now -h** command causes the system to shut down and power off. The **-F** flag shuts down the system without warning system users. Check with the system administrator before using this command. If you cannot use this method, you can power off the system by pressing the power button on the operator panel or the appropriate command at the HMC.

Attention: Using the power button on the operator panel or commands at the HMC to power off the system can cause unpredictable results in the data files. The next IPL will also take longer to complete if all applications in all partitions are not stopped beforehand.

Powering the System On

The system can be powered on after all of the following steps have been completed:
* All I/O drawer cables are connected
* UPIC cables are connected
* All PCI cables to supported subsystems are connected
* The hardware management console (HMC) is connected
* Power is connected to the system and the UEPO switch is set to On

After the required cables are installed, and the power cables are connected, the HMC graphical user interface provides a power-on function to turn on the power to the system. The power button on the media subsystem operator-panel can be pushed to initialize the system, but the preferred method is to use the HMC. Progress indicators, also referred to as *checkpoints*, are visible on the media subsystem operator panel display as the system power is turned on. The power LED on the media subsystem stops blinking and stays on, indicating the system power is on.

The processor subsystem and I/O subsystems are powered on through the system power control network (SPCN). When power is applied, the power LEDs on the media subsystem go from blinking to on continuously, and the power LEDs on the processor subsystem and I/O subsystem(s) come on and stay on. This indicates that power levels are satisfactory in the subsystems.

Powering On the System Using the Service Processor

The system can be powered on using the System Power Control menu, which is a Service Processor menu that is available to the privileged user.

Hot-Pluggable FRUs

Notes:

1. The Linux operating system does not support some hot-pluggable procedures.

2. Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shutdown and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

3. You do not have to power off the system to remove a hot-pluggable FRU from the processor subsystem or from I/O subsystems.

FRUs can be considered as not concurrently replaceable, concurrently replaceable with hot plug, or concurrently replaceable. The following table indicates which FRUs are hot-pluggable or non-hot-pluggable. Each FRU shown is identified as available for concurrent maintenance if applicable.

Processor Subsystem FRUs	Hot-Pluggable Concurrent Maintenance	Notes
Blowers	Yes	Processor subsystem and power blowers can be replaced with power on, follow the appropriate removal and replacement procedures.
DCA	Yes	DCAs can be replaced with power on, follow the appropriate removal and replacement procedures.
Bulk Power Enclosure	Yes	One Bulk Power Enclosure can be replaced with the system running, follow the appropriate removal and replacement procedures. **Note:** If you use the **Start Service** button and the ENBL LEDs on the enclosure components do not go off, do not proceed. Contact the customer and schedule a time for replacement of the enclosure with power off.
Bulk Power Controller (BPC)	Yes	BPCs can be replaced with power on, follow the appropriate removal and replacement procedures.
Bulk Power Regulator (BPR)	Yes	BPRs can be replaced with power on, follow the appropriate removal and replacement procedures.
Bulk Power Distributor (BPD)	Yes	BPDs can be replaced with power on, follow the appropriate removal and replacement procedures.
UEPO Switch panel	Yes	UEPO Switch panel can be replaced with power on, follow the appropriate removal and replacement procedures.
BPF	Yes	BPF can be replaced with power on, follow the appropriate removal and replacement procedures.
IBF	Yes	IBF can be replaced with power on, follow the appropriate removal and replacement procedures.
Capacitor book	No	
Processor subsystem chassis	No	
MCM	No	
Memory cards	No	
L3 cache	No	
Clock card	No	
I/O books	No	

I/O Subsystem FRUs	Hot-Pluggable Concurrent Maintenance	Notes
- I/O backplane and riser card	No	
- DASD backplane	No	
- Disk drives	Yes (AIX only)	Might require additional consideration or preparation by the customer for replacement.
- DCA (power supplies)	Yes	Only one DCA can be removed at a time.
- I/O fan assemblies	Yes	Can be replaced only if the DASD backplane is not installed.
- PCI adapters	Yes (AIX only)	Might require additional consideration or preparation by the customer for replacement.

Media Subsystem FRUs	Hot-Pluggable Concurrent Maintenance	Notes
Operator Panel	No	
Diskette drive	Yes (AIX only)	Must be removed from the configuration and the partition must be booted afterwards to ensure correct operation. Might require additional consideration or preparation by the customer for replacement.
CD ROM	Yes (AIX only)	Must be removed from the configuration and the partition must be booted afterwards to ensure correct operation. Might require additional consideration or preparation by the customer for replacement.
Optional media SCSI devices	Yes (AIX only)	Must be removed from the configuration and the partition must be booted afterwards to ensure correct operation. Might require additional consideration or preparation by the customer for replacement.

Power Subsystem

This section contains the removal and replacement procedures for the power subsystem.

Notes:

1. All pluggable BPA FRUs are replaced concurrent with system operation when the removal and replacement instructions are followed. Exceptions to this occur when multiple failures exist in the BPA.

2. Removal and replacement of the entire BPA enclosure (BPE) is also concurrent with system operation, unless there are multiple BPE failures.

Attention: Be sure to check for FRU redundancy to determine if the repair can be performed concurrently. If you cannot determine redundancy, delay the repair until the system can be shut down. See the "Hot-Pluggable FRUs" on page 749 for more specific details.

Bulk Power Assembly (BPA)

The bulk power assembly is on the top of the rack. This assembly provides power to the whole system. There are two sides to the BPA so that power is never completely removed from the system unless the system power is shut down, and the power cables are removed from the customer's power source.

Bulk Power Regulator (BPR)

The BPRs are located in the bottom positions of the bulk power enclosure (BPE).

Note: Before installing the BPR in the BPE (Bulk Power Enclosure) during a service or repair action, the Lock/Unlock switch located on the BPR, MUST be set to the Unlock position. Failure to do so may damage the BPR guide rails in the BPE resulting in extended outages and unnecessary, additional parts replacement.

Removal
Attention: The BPR unit weighs approximately 12.47 kg (27.5 lbs).

1. Locate the BPR to be replaced.
2. Note the state of the BPR ENBL LED.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if the ENBL (Good) LED goes off or the repair has been scheduled (System outage - UEPO off),
5. Locate the BPR to be replaced and manually slide its Lock/Unlock switch to unlock (power switch to the right). At this point, the ENBL LEDs turn off.
6. If the integrated battery feature (IBF) is installed, manually turn off the IBF circuit breaker attached to the BPR being repaired. Unplug the battery cable from the front face of the BPR.
7. Loosen the left and right fasteners using the torque tool (part number 6422789). Push up on the BPR release levers, and slide the unit out of the slot.

Replacement
1. Make sure that the BPR release levers are in the UP position. Slide the unit into slot until one inch from BPE. Using both hands on the front of the BPR, firmly and quickly seat the BPR against the backplane.
2. Tighten the left fastener four turns with torque tool followed by four turns to the right fastener. Torque the left fastener to completion, followed by the right fastener. Return to the left fastener and ensure that it is properly torqued.
3. Move the BPR release levers to the DOWN position.
4. If the battery feature is installed, reconnect the battery cable to the connector on the front face of the BPR.
5. Manually turn on the IBF circuit breaker.

6. Move the BPR Lock/Unlock switch to lock (power switch to the left).
7. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure, if this repair was completed during a system outage, bring the system back up.

Bulk Power Controller (BPC)

The BPC is located immediately above the top BPR.

Attention: This service procedure may produce other power error code(s) (101x xxxx) between the time the **Start Service** button is pressed and the **Service Complete** button is pressed, during concurrent repair. If normal system operation continues, as described by this procedure, ignore these error codes.

Removal
Attention: The BPC unit weighs approximately 3.18 kg (7 lbs).

1. Locate the BPC to be replaced.
2. Note the state of the BPC LEDs.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if the ENBL (Good) LED goes off or the repair has been scheduled (System outage - EPO off),
5. Check the ENBL LED for all the BPRs (LED on right side of FRU) on same BPA side. For each BPR that has this LED in the ON state, manually slide the power switches to the right.
   Attention: Do not switch off units where this LED is already off.
6. Verify that all cables are labeled for plug location and then unplug the cables from the BPC.
7. Loosen the left and right fasteners using the torque tool (part number 6422789). Slide the unit out of the slot.

Replacement
Attention: Before proceeding, make sure that all the BPR ENBL LEDs are OFF. For each BPR that has this LED in the ON state, manually slide the power switches to the right. Do not switch off units where this LED is already off.

Attention: Make sure that the UEPO bypass switch on the BPC is in the BYPASS position.

1. Slowly slide the BPC into the slot and carefully seat the BPC against the backplane.
2. Tighten the left and right fasteners with the torque tool.
3. Plug all cables to the BPC, ensuring that the plug location and the cable label agree.
4. Manually move any BPR power switches that are to the right (OFF) position, to the left (ON) position.
5. Move the UEPO bypass switch to the NORMAL position.
6. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure. The BPA automatically configures as it powers on.

Bulk Power Distributor (BPD)

There can be two BPDs, located immediately above the BPC. If only one BPD is required, an airflow baffle must installed in the top BPD position.

Attention: This service procedure may produce other power error code(s) (101x xxxx) between the time the **Start Service** button is pressed, and the **Service Complete** button is pressed, during concurrent repair. If normal system operation continues, as described by this procedure, ignore these error codes.

Removal
Attention: The BPD unit weighs approximately 2.27 kg (5 lbs).

1. Locate the BPD to be replaced.
2. Note the state of the BPD ENBL LED.

3. Press the green **Start Service** button on the UEPO switch.

4. Proceed only if the ENBL (Good) LED goes off or the repair has been scheduled (System outage - EPO off),

5. Check the ENBL LED for all the BPRs (LED on right side of FRU) on same BPA side. For each BPR that has this LED in the ON state, manually slide the power switches to the right.

   Attention: Do not switch off units where this LED is already off.

6. Verify that all cables are labeled for plug location and then unplug the cables from the BPD.

7. Loosen the left and right fasteners using the torque tool (part number 6422789). Slide the unit out of the slot.

Replacement

Attention: Before proceeding, make sure that all the BPR ENBL LEDs are OFF. For each BPR that has this LED in the ON state, manually slide the power switches to the right. Do not switch off units where this LED is already off.

Attention: Make sure that the UEPO bypass switch on the BPC is in the BYPASS position.

1. Slowly slide the BPD into the slot and carefully seat the BPD against the backplane.

2. Tighten the left and right fasteners with the torque tool.

3. Plug all cables to the BPD, ensuring that the plug location and the cable label agree.

4. Manually move any BPR power switches that are to the right (OFF) position, to the left (ON) position.

5. Move the UEPO bypass switch to the NORMAL position.

6. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure. The BPA automatically configures as it powers on.

Bulk Power Fan (BPF)

The BPF is located immediately to the right of the BPC and positioned vertically in the BPA.

Removal

Attention: The BPF unit weighs approximately 3.63 kg (8 lbs).

1. Locate the BPF to be replaced.
2. Note the state of the BPC ENBL LED on the same BPA side as the BPF to be replaced.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if the ENBL (Good) LED goes off or the repair has been scheduled (System outage - EPO off),
5. Verify that the BPF cable is labeled for plug location and then unplug the cable from the BPC.
6. Remove the fan cover plate and set aside for the replacement procedure.
7. Loosen the upper and lower fasteners using the torque tool (part number 6422789)l. Move the BPR release, levers if necessary, and slide the unit out of the slot.

Replacement

1. Ensure that the BPF fasteners are to the left side.
2. Slowly slide the BPF into the slot and carefully seat the BPF against the front of the BPE, moving the BPR release levers if necessary.
3. Tighten the upper and lower fasteners with the torque tool.
4. Return the BPR release levers to the down position, if necessary.
5. Plug the BPF cable to the BPC, ensuring that the plug location and the cable label agree.
6. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure.

Bulk Power Enclosure (BPE)

Attention: This service procedure may produce other power error code(s) (101x xxxx) between the time the **Start Service** button is pressed and the **Service Complete** button is pressed, during concurrent repair. If the system behaves normally, as described by this procedure, ignore these error codes.

Removal

Attention: The BPE unit weighs approximately 18.14 kg (40 lbs).

1. Locate the BPE to be replaced.
2. Note the state of all ENBL LEDs in the BPE.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if *all* BPR ENBL LEDs go off or the repair has been scheduled (System outage - EPO off),
5. Manually slide all Lock/Unlock switches (power switches to the right, unlock) on all BPRs attached to the BPA side being repaired. At this point, the ENBL LEDs turn off.
6. Manually turn off all IBF circuit breakers attached to the BPA side being repaired.
7. Verify that all cables are labeled for plug location and then unplug the cables from the BPA in the following order:
    a. BPC
    b. BPD
    c. BPR
    d. IBF (if installed)
    e. ac line power cord
8. Remove all pluggable FRUs from the BPE (BPRs, BPCs, BPDs, and BPF).
9. Remove the four mounting screws.

Note: Do not remove the two screws at the bottom left, as these fasten the cage rail to the frame.

10. Slide the unit out of the frame.

Replacement

Attention: Make sure that the all BPR Lock/Unlock switches (power switches) are in the unlock (right, OFF) position on this BPA before proceeding.

Attention: Make sure that the UEPO bypass switch on the BPC front panel is in the NORMAL position.

1. Slowly slide the BPE into the frame using the right side guide pins until the side flanges contact the frame.
2. Fasten the four mounting screws.
3. Replace all pluggable FRUs to the BPE (BPR, BPC, BPDs, BPF, and baffles).

   Note: Be sure to check the board connector for each FRU for any visible signs of damage (such as broken sockets.) before plugging into the backplane. Replace any FRU that is damaged.

4. Plug all cables to the BPA FRUs, ensuring that the plug location and the cable label agree.
5. Plug in the ac line power cords.
6. Manually turn on all IBF circuit breakers (if installed) attached to the BPA side being repaired.
7. Manually move all Lock/Unlock switches (power switches) to the lock position (the left, ON position) on all BPRs attached to the BPA.
8. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure. The BPA automatically configures as it powers on.

Unit Emergency Power Off (UEPO) Card Assembly
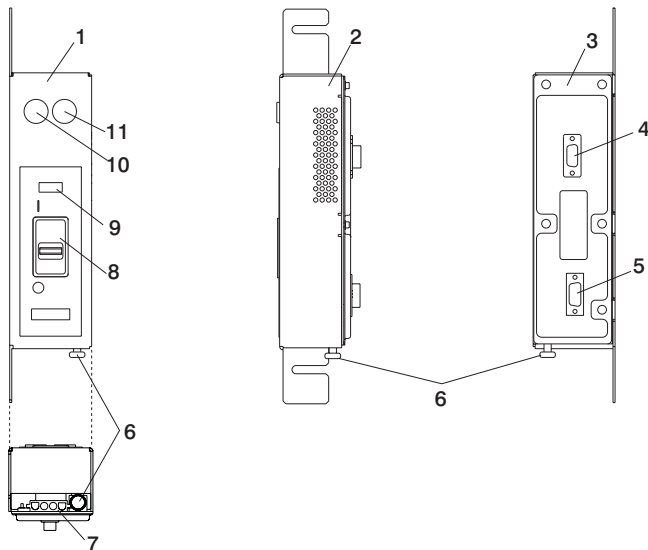
1	Simplified UEPO Front Panel	**7**	J02 Connector (White)
2	Simplified UEPO Side Panel	**8**	Power Switch
3	Simplified UEPO Rear Panel	**9**	System Fault LED
4	J00 Connector (Back)	**10**	Start Service Button (Green)
5	J01 Connector (Back)	**11**	Service Complete Button (White)
6	Room EPO Bypass Interlock		

Removal

Note: If you are replacing this assembly with a new assembly, the manufacturing label with the machine type, model number, and the serial number for the subsystem must be ordered to apply to the new part. For information on replacement labels, see Chapter 10, "Parts Information", on page 905.

1. Locate the system with the faulty UEPO switch.
2. Press the green **Start Service** button on the UEPO switch.
3. Switch the UEPO bypass switches on both BPCs to the ″Bypass″ position (to the right).
4. Ensure that the red switch on the EPO panel is in the ON position.
5. Verify that all cables are labeled for plug location and then unplug the cables from the UEPO card assembly.
6. Loosen, but do not remove, the two 8-mm M5 mounting screws. Slide the assembly forward and away from the frame.

Replacement

Note: If you are replacing this assembly with a new assembly, the manufacturing label with the machine type, model number, and the serial number for the subsystem must be ordered to apply to the new part. For information on replacement labels, see Chapter 10, "Parts Information", on page 905.

1. Place the assembly over the two 8-mm M5 screws, slide it downward, and tighten the screws.
2. Plug all cables to the UEPO card assembly, ensuring that the plug location and the cable label agree.
3. Install the external cable, if required, to connector J02.
   a. If the external EPO connection is installed, the internal toggle switch is mechanically forced into the ROOM EPO ACTV position (to the right).

b. If there is no external EPO cable, manually set the internal toggle switch to the ROOM EPO BYPASS position. To set this switch, pull the knob down, to the ROOM EPO BYPASS position, and release the knob (to the left).

4. Ensure that the red UEPO switch is on (up position).

5. Switch the UEPO BYPASS switches on both BPCs back to NORMAL mode.

6. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure.

Integrated Battery Feature (IBF)

Removal

Attention: This process requires:

- The use of a lift tool (part number 09P2481) and lift-plate assembly tool (part number 11P4369).

- The lift tool wheels must be chocked to prevent it from moving during the operation. The frame must not be on its casters, and the leveling pads must be engaged to prevent the frame from moving during the operation.

The IBFs (if installed) are mounted under the media subsystem.

1. Locate the IBF to be replaced.

2. Press the green **Start Service** button on the UEPO switch.

3. Turn off the IBF circuit breaker (to the right).

4. Unplug the battery cable from the front of the IBF, and remove the 7-mm M5 screw (closest to the connector) that is holding the cable to the frame. This action allows the cable to move so that the IBF can be removed.

5. Remove the two mounting bolts from the guide rails and retain for reuse during the replacement procedure.

6. Read all safety instructions before performing this operation. Unpack the lift tool and follow assembly instructions included with the tool. Inspect the tool for damage (do not perform the removal procedure with a damaged lift tool). Replace the blue lift plate with the orange lift plate (part number 11P4369). Orient the two round holes in the lift plate to the side of the lift tool that will be closest to the frame. Install the wheel chocks and engage the brake.

7. Raise the plate to a height such that the lift plate is just below the base of the IBF you are removing. Release the pins on the lift plate and fully extend the center portion of the plate toward the IBF and lock it in place. Release the pins on the extender arms and position them on both left and right side. The arms must fit around the frame extenders and lock in place (do not adjust the lift tool after these arms are locked in place).

8. One person should gently pull and guide the IBF onto the lift plate. The IBF must be removed far enough to clear the front face of the frame. Retract the extender arms and center portion of lift plate.

   Note: Ensure that the IBF is in the center of the lift plate.

9. Lower the IBF to the bottom position of the lift tool.

10. Remove the wheel chocks and release the brake. Flip the crank handle 180 degrees. Carefully move the lift tool with the IBF to the staging area. The brake and wheel chocks must be in place when transferring the IBF to or from the packaging material.

Replacement

Note: Install rails in the frame if not already installed.

1. Position the lift tool such that the new IBF can be moved onto the lift plate.

2. Install the wheel chocks and engage the brake.

3. Move the new IBF onto the tool with the rear side toward the two holes of the lift plate. The side with the handles is considered the front side.

Note: Ensure the IBF is in the center of the lift plate.
Remove the wheel chocks and disengage the brake.

4. Position the lift tool as close as possible to the rack. Install the wheel chocks and engage the brake.

5. Raise the plate to a height such that the lift plate is just above the rails of the slot you are installing it in. Release pins on the lift plate and fully extend the center portion of the plate toward the frame and lock it in place. Release the pins on the extender arms and position them on both left and right side. Arms must fit around the frame extenders and lock in place (do not adjust the lift tool after these arms are locked in place).

6. One person should gently push the IBF into the frame. Adjust the height of the lift plate, as needed.

7. Lower the lift plate and remove it from the lift tool, repackage the lift tool.

8. Fasten the IBF to the mounting rails, using two mounting bolts.

9. Ensure the circuit breaker is in the off (right) position if it is not already off.

10. Plug the battery cable into the IBF. Fasten the cable-retaining clamp (closest to the cable's connector) to the frame, using a 7-mm M5 screw

11. Reinstall all components removed during the removal process.

12. Set the circuit breaker to the on (left) position.

13. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure.

Processor Subsystem

This section contains the removal and replacement procedures for the processor subsystem. Handle all processor subsystem FRUs with extreme care.

Installing the MCM/L3/Passthrough Plug Map

If the MCM/L3/Passthrough Plug Map is not installed in the system, install it before continuing with any repair action for MCMs or L3 cache module.

With the front cover open, locate the right frame extender (located on the opposite side of the UEPO switch). The 50 mm (approximately 2 inch) wide label should be installed vertically, along this extender, approximately in line with EIA frame positions 22 - 28.

The trifold label has two hook-and-loop fastener strips attached to the back. Remove the adhesive backing from the hook-and-loop fastener and attach it to the frame extender. A small piece of hook-and-loop fastener is used to help keep it folded while attached to the frame. The label appears similar to the following:

 P/N 11P4914

Using this Label

Whenever an MCM/Passthrough module is added or replaced/reseated during a repair action, a sticker with the module's serial number is provided for use with the plug map label according to its plugging location. If serial number label is not available, then record the serial number of the MCM/Passthrough module is added, reseated, or replaced along with the number of times plugged. This module is then allowed three plugs with each plug recorded on label. If the module should need to be removed and reinstalled a fourth time, it must be replaced.

The process is similar for the L3 module, except a separate serial number label is not provided, instead the serial number is located on a sticker attached to the L3 heatsink. Record the serial number of the L3 modules added, replaced, and reseated along with the number of times plugged. If the module should need to be removed and reinstalled a fourth time, it must be replaced.

I/O Books and I/O Blanks

Attention: Before starting the installation of the primary I/O book FRU, the customer must back up the HMC partition profiles, save upgrade data, and back up critical console data.

The following procedures are for removing, inspecting, and replacing primary and secondary I/O books. Before proceeding to the removal and replacement procedures, read and perform the procedures in "Before I/O Book Replacement".

Before I/O Book Replacement

When the managed system is powered off with standby power still on, open a virtual terminal window on the HMC and open the service processor menus. On the main menu, look for the platform firmware level (which is in the format RHyymmdd or vHyymmdd, where v is the version number) above the main menu on the screen. Record the firmware level.

If the firmware is RH020312 or earlier, it is GA1 firmware. If it is between RH020413 and RH021024 (inclusive), or 2Hyymmdd, it is GA2 firmware. If it is RH021025 or later, or 3Hyymmdd or later, it is GA3 firmware.

The primary I/O book FRU might have a later level of firmware than the HMC recognizes. This causes a "version mismatch" error message on the HMC. If this happens, the HMC can no longer communicate with the managed system. To determine if this is a potential problem, check the HMC's software level, as follows:

1. Click **Help** at the top of the HMC console.
2. Click **About the Hardware Management Console**.
3. Install the new primary I/O book FRU and follow the procedure in one of the following cases:
   - Case 1: Version Mismatch Error Displays:

     If the "version mismatch" error appears on the HMC, the firmware level on the new primary I/O book must be determined.

     Note: You need a laptop computer (and cable part number 62H4857) capable of connecting to serial port 2 on the primary I/O book.
     a. Attach the laptop computer and cable to serial port 2 on the primary I/O book.
     b. When OK is displayed in the operator panel on the media drawer, press a key on the virtual terminal on the laptop computer. The firmware version is displayed above the main menu, in the format RHyymmdd or vHyymmdd.

        If the HMC is at release 2 version 1.2 (or earlier), and the system firmware is at GA3, which is any level including RH021025 and later, and 3Hyymmdd and later, there are two options for resolving the version mismatch:
        – The customer can upgrade to HMC release 3 version 1.0 (or later), also referred to as HMC recovery version 1.3 (or later).

           OR
        – Flash the GA2 level of platform firmware on the primary I/O book after it is installed. GA2 in this case might be RH021024; however, if a level of firmware with the name in the format of 2Hyymmdd or later is available, use that level instead of RH021024.
   - Case 2: Version Mismatch Error Does Not Display:

     If the "version mismatch" error does not appear on the HMC, the firmware level of the new primary I/O book must still be determined.

     Note: You need a laptop computer (and cable part number 62H4857) capable of connecting to serial port 2 on the primary I/O book.
     a. Open a virtual terminal window on the HMC.

b. When OK is displayed in the operator panel on the media drawer, press a key on the virtual terminal on the laptop computer. The firmware version (from the new I/O book) is displayed above the main menu, in the format RHyymmdd or vHyymmdd.

   – If the HMC is at release 2, no further action is required, (ensure that the system firmware is updated to the latest GA2 firmware level because it is a minimum mandatory level).

   – If the HMC is at release 3 version 1.0 (or later), also referred to as HMC recovery version 1.3 (or later), no further action is required, (ensure that the system firmware is updated to the latest GA2 firmware level because it is a minimum mandatory level).

Removal

Note: If you are removing a primary I/O book, save the service processor settings so that you can reset the service processor after replacement. See "Saving and Restoring Service Processor Settings" on page 680 for information about saving the service processor settings.

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. At the back of the system, remove the safety bars from the I/O books and blanks.
3. To ease replacement, record the connector locations of all cables attached to the I/O book. Disconnect all of the cables to the I/O book.
4. If the primary I/O book is being replaced, remove all VPD cards from the old primary I/O book and install them into the new primary I/O book. See "VPD Card" on page 811 for instructions on removing and replacing the VPD cards.
5. If the primary I/O book is being replaced, locate the backup copy of the service processor settings. If a backup copy is not available, use the "Save or Restore Hardware Management Policies," in the "Introduction to Tasks and Service Aids" section of the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769, to back up the service processor settings saved in NVRAM. If you cannot run the appropriate task, or the service processor settings were not previously backed up, the service processor settings must be entered manually after the primary I/O book is replaced.
6. Grasp the blue release latches located at the top and bottom of the memory book between your thumb and index finger, and press the tabs together. Actuate both blue handles simultaneously until the book fully unseats from the connector. Pivot the tabs and pull the book straight back.

Inspection

You must examine the connectors for any connector damage on the removed book using the 3X Magnification Glass (part number 11P4747) included in the system toolkit. If you identify a defect on the book, do not install the replacement book without contacting your next level support for instructions.

A damaged connector on a defective book may indicate a damaged system backplane. If an I/O book connector is damaged, then inspect the system backplane for damage.

If the removed I/O book is not damaged, carefully remove the new I/O book from the packaging. Be sure to protect the connector and the blue handles when you remove the I/O book from the cardboard box or ESD bag. Do not handle the I/O book by its connector or either of its blue handles. Remove the protective cover from the connector and install it on the defective I/O book.

Notes:

1. Do not stack books on top of each other. ESD bags do not provide sufficient stacking protection.
2. Do not rest an I/O book on its connector or on its blue handles at any time.

After the I/O book has been removed from the ESD bag, examine the Book VHDM connector using the 3X Magnification Glass (part number 11P4747) included in the system toolkit. If any connector shows signs of damage, do not use it.

Replacement

Note: Before you replace the primary I/O book, save the bootlist information for the system in SMO mode. Then, after the I/O book is replaced, power on, and go to the SMS menu and set the bootlist.

To replace an I/O book, do the following:

1. Inspect the new I/O book for damage. For more information, see "Inspection" on page 763.
2. Unlatch the two blue handles on the replacement book.
3. Taking care not to hit the connector against the CEC cage, use both hands to carefully place the book on the CEC guides.
4. Slide the book in until it reaches the alignment pins.
5. Using even pressure, actuate both blue handles simultaneously until the book is fully seated.
6. Restore the service processor settings saved in step 5 on page 763.
7. Repeat this process for all replacement I/O books.
8. If any cables were removed during the removal procedure, plug all cables into their correct locations.
9. Turn on the power as described in "Powering the System On" on page 748.

Notes:

1. If you are replacing a primary I/O book on a system with an HMC attached, you must set the system name through the Main Menu (for a privileged user) of the service processor menus. Reboot the HMC after setting the system name to allow the HMC to recognize the attached managed system by its new name. If the HMC does not recognize the attached managed system, the default assigned name is *unnamed*. After the system is selectable by its new name on the HMC console, the recover managed system task can be executed at the HMC console to restore partition information. The partition information is copied from the HMC console to the new service processor (part of the primary I/O book) NVRAM and may take 15 to 30 minutes to complete. Wait for the operation to complete as indicated on the HMC.
2. If you are replacing a primary I/O book, make sure you set the system time and date through the date operating system command, and enter the I/O type as described in "Change I/O Type" on page 698.

Battery

CAUTION:
A lithium battery can cause fire, explosion, or a severe burn. Do not recharge, disassemble, heat above 100 degrees C (212 degrees F), solder directly to the cell, incinerate, or expose cell contents to water. Keep away from children. Replace only with the part number specified for your system. Use of another battery may represent a risk of fire or explosion.

The battery connector is polarized; do not attempt to reverse the polarity.

Dispose of the battery according to local regulations.
C9

The battery is located in the primary I/O book.

Note: If you are removing a primary I/O book, save the service processor settings so that you can reset the service processor after replacement. See "Saving and Restoring Service Processor Settings" on page 680 for information about saving the service processor settings.

Removal

1. Remove the primary I/O book (see "I/O Books and I/O Blanks" on page 761).
2. Use a T10 torx driver to remove the screws for the short cover near the connectors.
3. Locate the battery near the spare VPD card connector as shown in the following illustration.
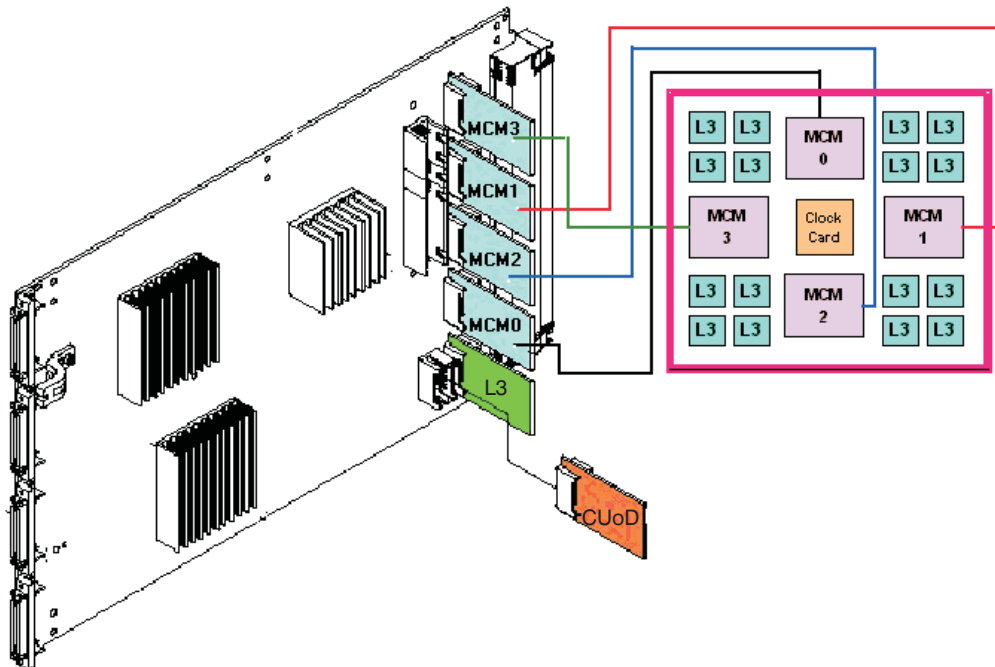
4. Use one finger to gently press the top edge of the battery in and down from the battery socket. Then use your thumb and index finger to pull the battery out of the socket, as shown in the following

illustration.
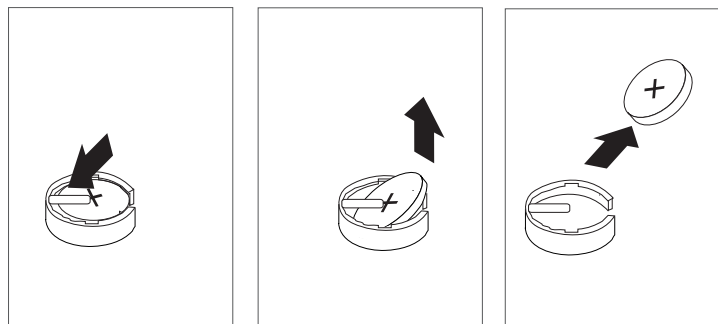
Replacement

Replace in reverse order.

Notes:

1. Ensure that the battery polarity is correct; place the battery in the socket with the positive side facing out.
2. Reset the service processor settings. See "Saving and Restoring Service Processor Settings" on page 680 for information about restoring the service processor settings.
3. Ensure that the customer resets the service processor information such as the date, time, and passwords.

Processor Subsystem DCA (Distributed Converter Assembly) Books and DCA Blanks

Removal

The following safety notice applies to power-related field replaceable units.

DANGER

> **Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit.**
> D02

1. Locate the DCA to be replaced.
2. Note the state of the DCA LED.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if *all* the DCA's LEDs go off or the repair has been scheduled (System outage - EPO off),
5. Loosen the upper and lower fasteners, using the torque tool (part number 6422789), alternating between the fasteners until the unit can slide out of the slot.
6. Grasp both sides of the DCA and pull it out of the drawer.

Replacement

1. Carefully slide the DCA into the slot as far as possible (the back edge of the top of the DCA is about 0.25 inch from the cage bracket).

   Note: Do not force the DCA against the backplane, as this may damage the connector.
2. Hold the upper part of the DCA against the backplane, and use the torque tool to engage the upper fastener about two turns into the cage bracket.
3. Repeat the previous step for the lower fastener.
4. Alternate tightening the upper and lower fasteners until both are fully torqued in.
5. Check torque on both fasteners.
6. Plug all cables into their correct location in the DCA.
7. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure.

Capacitor Books and Blanks

Removal

The following safety notice applies to power-related field replaceable units.

DANGER

> **Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit.**
> D02

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. If you have not already done so, open the rear door of the rack unit.
3. Locate the capacitor book or blank to be removed.
4. Loosen the upper and lower fasteners, using the torque tool (part number 6422789), alternating between the fasteners until the unit can slide out of the slot.
5. Grasp both sides of the capacitor book or blank, and pull it out of the drawer.

Replacement

1. Carefully slide the capacitor book into the slot as far as possible (the back edge of the top of the capacitor book is about .25 inch from the cage bracket).

   Note: Do not force the capacitor book against the backplane, as this may damage the connector.
2. Hold the upper part of the capacitor book against the backplane, and use the torque tool to engage the upper fastener about two turns into the cage bracket.
3. Repeat the previous step for the lower fastener.
4. Alternate tightening the upper and lower fasteners until both are fully torqued in.
5. Check torque on both fasteners.
6. If any cables were removed during the removal procedure, plug all cables into their correct locations.
7. Turn on the power as described in "Powering the System On" on page 748.

MCM Module (Processor) and Passthru Modules

Attention: All components must be replaced to the location from which they were removed. Before replacing MCMs, check with your support center to ensure you have been directed to replace the MCM(s) by a valid error code in Chapter 5, "Error Code to FRU Index", on page 341.

Handling Static-Sensitive Modules

Attention: MCM and L3 modules are sensitive to static electricity discharge. These devices are shipped in antistatic containers to prevent damage caused by electrostatic discharge.

Take the following precautions:
- Use an antistatic wrist strap while handling the device.
- Do not remove the device from the antistatic container until you are ready to install the device in the system unit.
- With the device still in its antistatic container, touch it to a metal frame of the system.
- Grasp modules by the heatsink. Avoid touching the interposer buttons.
- If you need to lay the device down while it is out of the antistatic container:
  - Lay the MCMs with the posts down on the antistatic mat.
  - Lay the L3s with the LGA connector down in the antistatic tray.

  Before picking it up again, touch the antistatic container and the metal frame of the system unit at the same time.
- Handle the devices carefully in order to prevent permanent damage.

Attention: Before you remove or replace any MCM or L3 cache module, *stop*, read and understand this entire procedure (MCM Module (Processor) and Passthru Modules) and the procedure for "L3 Cache Modules" on page 786. Also, check to ensure that the MCM/L3 Label Map is installed. Refer to "Installing the MCM/L3/Passthrough Plug Map" on page 760.

Attention: The MCM modules in this system can be attached to the backplane a maximum of three times. Check the *MCM/L3 Label Map* to confirm the number of times the target module has been unplugged. If it has been unplugged three times, order a new module. *If an MCM module is removed for a fourth time, it must be replaced with a new MCM module.* New MCMs are shipped with a new MCM/L3 plug count adhesive replacement label. When you install a new L3 cache module, place the new label in the correct position on the *MCM/L3 Label Map*. If a new *MCM/L3 Label Map* is needed, see "Tools" on page 926 for replacement label part number.

Note: The MCM module and its associated VPD card are a single FRU, and must be replaced as a set. See "VPD Card" on page 811 for VPD card removal and replacement procedure.

Attention: If the base configuration of the system has only one MCM, The passthru modules are replaced with a filler cover that is attached only by the cam locks.

Removal
Attention: If more than one module is to be replaced or reseated, begin with the upperpmost module, replace it and then go to module(s) in the next lower position, until the lowermost module has been replaced or reseated. Before any MCM, passthru module, or cover is removed, perform a general cleaning operation, as described in step 3 of the following procedure.

1. Turn off the power as described in "Powering Off and Powering On the System" on page 747.
2. Remove the fan chassis. See "Fan Chassis" on page 818.
3. Perform a general cleaning operation, using a sash brush, (*not* the one included with the FRU kit) and vacuum cleaner (see "Tools" on page 926 for the tool part numbers), to remove any accumulated dust and debris that has settled in the processor subsystem. Hold the vacuum hose near the brush to remove any debris that the brush generates.

4. Note the location of the module being removed on the *MCM/L3 Label Map* on the system to confirm the number of times the target module has been unplugged. If it has been unplugged three times, order a new module.

   Attention: Each MCM *must* be returned to the location from which it was removed.

   Note: If this is the first removal/reseat for the module, record the serial number of the module and the date of the action.

5. Ensure that the locking cams at the front of the MCM module are engaged with the module.

6. Remove DCA books and blanks 2 through 6, as well as both capacitor books. See "Processor Subsystem DCA (Distributed Converter Assembly) Books and DCA Blanks" on page 767 and "Capacitor Books and Blanks" on page 768.

7. Ensure that the actuation bolt behind the MCM module is in the down position.

Front

Right Side

Back
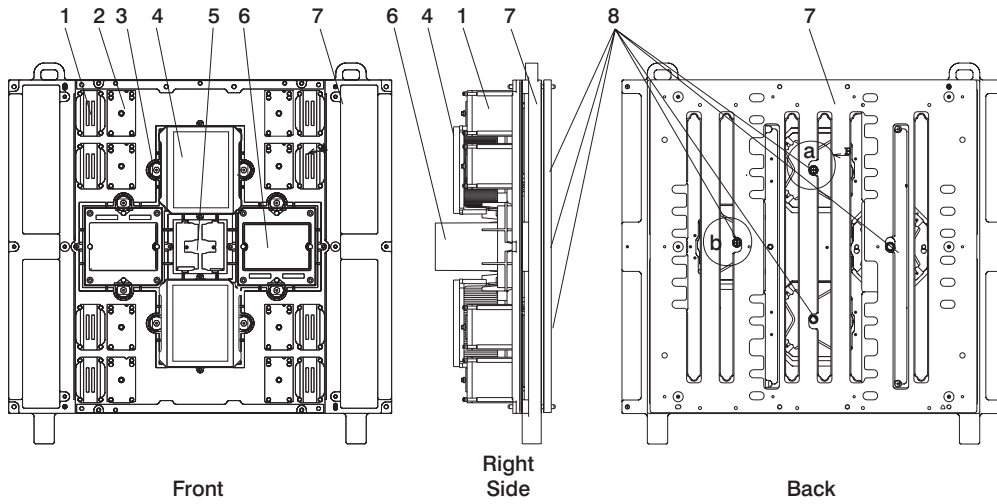
1	L3 Filler	**5**	System Clock Card
2	L3 Module Assembly	**6**	MCM Filler or Passthru Card
3	MCM Locking Cam	**7**	System Board
4	MCM Heatsink / Module Assembly	**8**	Actuation Bolt

8. Use the torque wrench (part number 11P4486, supplied with the system tool kit) to loosen the actuation bolt in the center of the MCM module. If installing a new MCM, remove the actuation bolt.

9. If installing a new MCM, insert the new actuation bolt supplied with the new MCM module.

10. Move the actuation bolt to the up position and hand-tighten to hold the assembly in the up position.

11. At the front, hold the MCM module with one hand while using the 8-mm socket to unlatch the locking cams.

12. With both hands, grasp the module across the narrow span of the heatsink cap, and pull the MCM module from the system board and place it, posts-down, on the ESD mat.
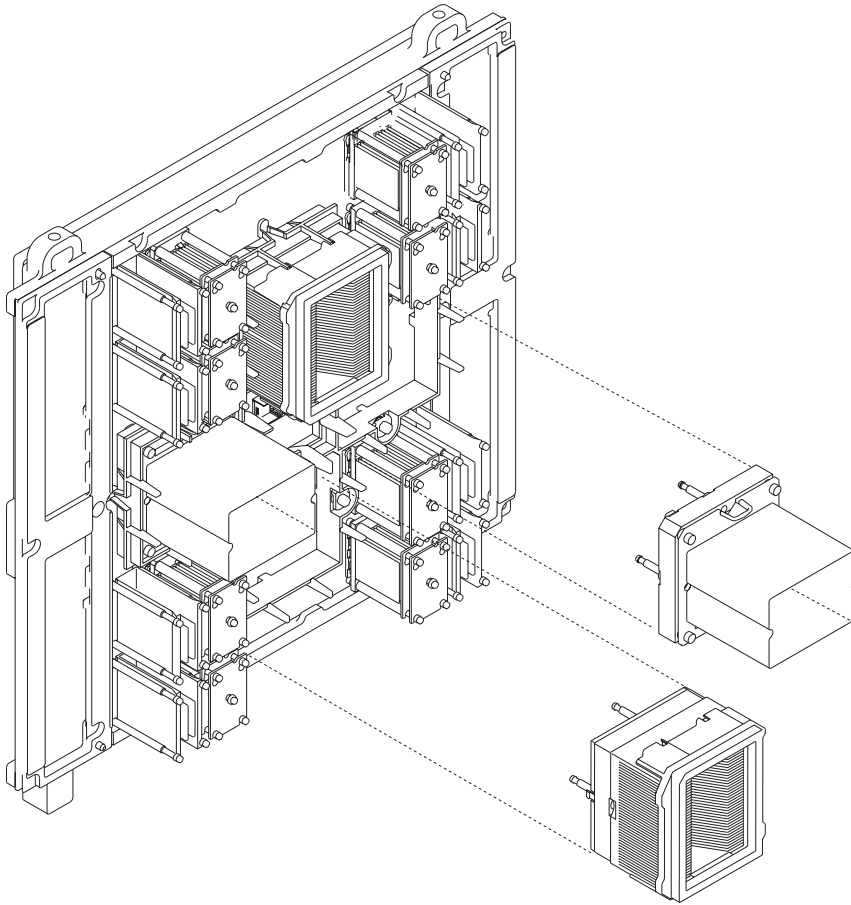
13. Using the new brush supplied with the new module, follow the procedures described in this step to clean the LGA site on the system backplane. The LGA site is the position from which you removed the MCM module.

   Note: Before you remove the brush from its protective bag, loosen the bristles by pressing them on the ESD mat until they are 90 degrees from the handle.

   Attention: Each time an MCM module is removed from system backplane, the LGA site where the module connects *must* be cleaned. With the brush supplied with the replacement kit, use only downward strokes, starting in the upper-left location. Using firm pressure, brush left to right, top to bottom, using overlapping strokes as shown in the following illustration.
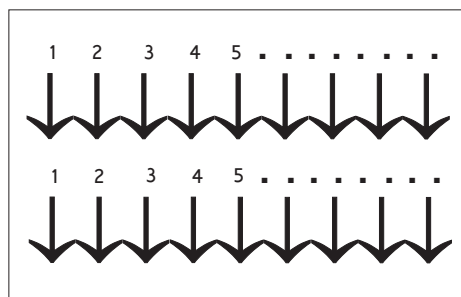
The brush must be discarded after cleaning only one LGA site.

14. Each time an MCM module (or passthru) is installed, the associated interposer *must* be inspected. Inspect the MCM (or passthru) interposer, using a magnifying glass (part number 11P4747). If either of the following conditions occur, the interposer is not acceptable and the module must be returned:

Shorts   If the button, a loop of the button wire, or an individual button wire lead extends more than three times the width of the wire outside of a connector hole chamfer (top side) or counter bore pin indent (bottom side).
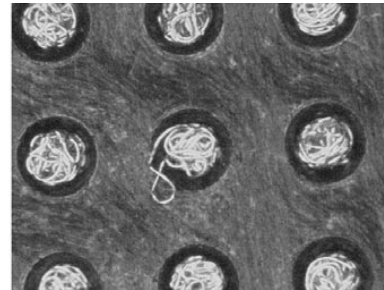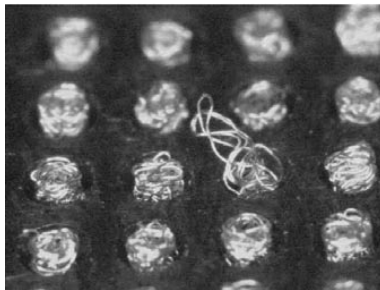
Missing buttons
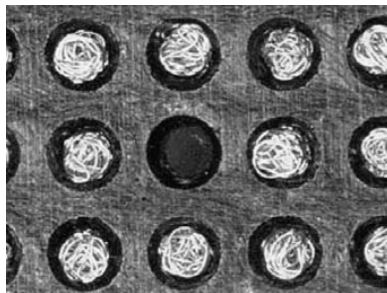
15. Record on the system log sheet on the system the date that this MCM has been removed.

Returning MCM Modules: The following procedure provides handling instructions for MCM modules to be packaged and returned to the plant of manufacture.

1. If you are replacing an MCM, use the packaging from the new module to return the old module. If the packaging is not available, order the following parts for MCM/Passthru protective packaging:
   - 1 Black Plastic Case (Top and Bottom) 02P3750
   - 1 MCM Heat Sink Cap - 7335949 or 7335963 (not required for Passthru)
   - 1 Corrugated Carton - 7335743 (carton and foam assembly including: 1 Bottom Foam Cushion, 1 Top Foam Cushion, 1 Desiccant (Optional for return packaging)
   - 1 ESD Bag - 7352456
   - 1 Foam Sheet - 7332979

2. Inspect the base of packaging part number 02P3750 and verify to see if an ″AA″ is labeled.

3. If the base has an ″AA,″ place the MCM/Passthru module in the package base. If the base does not have an ″AA,″ place one sheet of thin pink foam (part number 7332979) over the base and place the MCM module in the package base.

4. Place top adapter foam piece (part number 7335949) on the heat sink of the MCM module (not required for passthru module).

5. Complete the inner package by placing the top cover over the module and onto the base. Ensure the cover is secured to the base.

6. Reuse ESD bag part number 7352456 and place the packaged module inside the bag along with the desiccant. Seal with tape. The desiccant is optional for returned parts.

7. Place this MCM/Passthru assembly in the foam cushion packaging carton (part number 7335743).

8. Seal the carton and ship.

Replacement or New Installation

Note: This procedure is to be performed only by trained service personnel.

1. Go to "Methods for Testing MCMs and Passthru Modules for a Short Circuit" on page 776 and install the MCM/L3 module short-circuit test tool. Use the test tool during the MCM replacement procedure to ensure that the MCMs are installed without a short circuit. If you install an MCM and encounter a short circuit, the MCM you installed must be replaced.

2. If installing a new MCM, insert the new actuation bolt supplied with the new MCM module and move the actuation bolt and spring assembly to the up position and hand-tighten to hold the assembly in the up position. Perform a general cleaning operation, using a sash brush, (*not* the one included with the FRU kit) and vacuum cleaner (see "Tools" on page 926 for the part numbers), to remove any accumulated dust and debris that has settled in the processor subsystem. Hold the vacuum hose near the brush to remove any debris the brush generates.

3. Loosen the captive bolt in the center of the protective cover and remove the cover from the new MCM module, as shown in the following illustration.
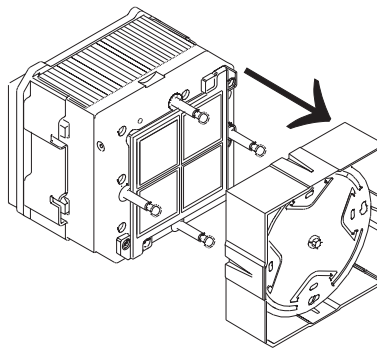
4. Grasp the module across the narrow span of the heatsink cap. Align the corner chamfer (flat corner) on the MCM module or the passthru to match the outline on the backplane.

   Attention: Verify that the guide pins protrude above the connectors.
   Carefully push the MCM module into the socket, and maintain pressure while closing both locking cams.

5. Loosen the actuation bolt at the rear of the MCM module.

6. Push the actuation bolt in and slide the spring plate assembly to the down position.

7. Use the torque wrench (supplied with the system tool kit, see "Tools" on page 926 for the tool part number) to tighten the actuation bolt. When the wrench clicks, followed by about 15 degrees of free motion, the bolt is seated.

   Attention: Do not over-torque the bolt.

   Check the MCM/L3 short-circuit test tool to ensure that short circuit was not created when the MCM was installed.

   If this is the last MCM you are installing, remove the MCM/L3 module short-circuit test tool and meter.

8. Remove the primary I/O book (see "I/O Books and I/O Blanks" on page 761) and replace the VPD card that was provided with the MCM module.
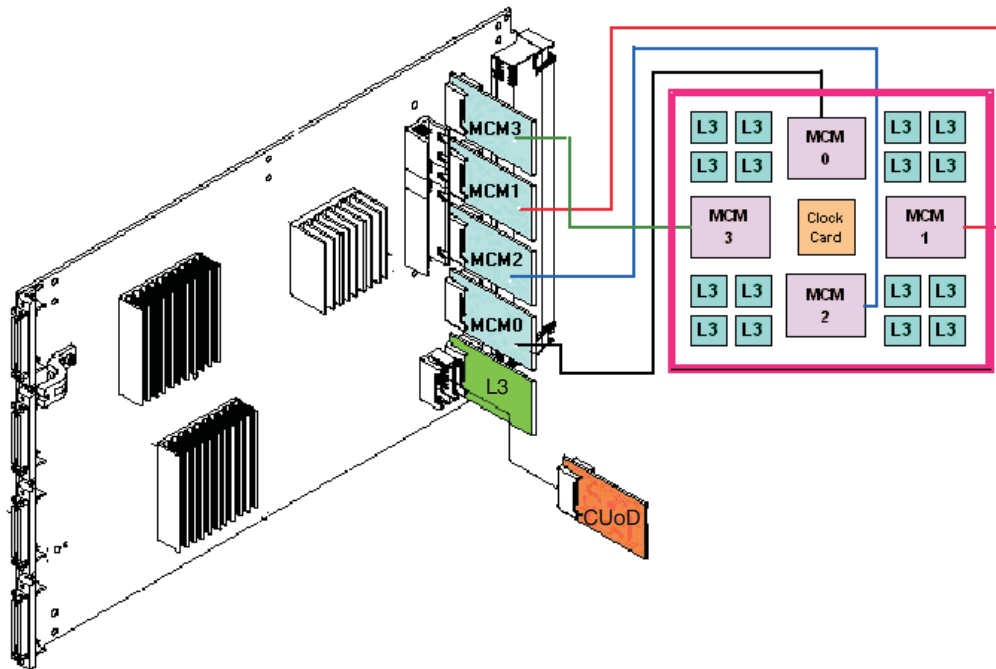
9. Replace the primary I/O book.

10. Replace the DCAs and DCA fillers that you removed earlier. See "Processor Subsystem DCA (Distributed Converter Assembly) Books and DCA Blanks" on page 767.

11. Replace the fan chassis. See "Fan Chassis" on page 818.

12. If an MCM or L3 cache module was just added or replaced, go to the service processor menu and select System Information Menu, then select MCM/L3 Interposer Plug Count Menu.

    If the MCM/L3 Interposer Plug Count Menu is not available, the system firmware level is too old, and the MCM plug count must be recorded as described in "Installing the MCM/L3/Passthrough Plug Map" on page 760 and "Using this Label" on page 760.

    You can also upgrade the system firmware to the latest level to make the MCM/L3 Interposer Plug Count Menu available, then continue with 13.

13. Find the index number that corresponds to the module that was just added or replaced and enter the new plug count that was included in the FRU or MES kit. If the plug count is not included with the FRU, enter the number 7 as the new plug count to account for the number of times the module was plugged during the manufacturing process. If the MCM/L3 was replaced from field spares, enter the number 8. Exit the menu completely before powering on the system.

14. Turn on power as described in "Powering the System On" on page 748.

Note: The 4-way processor MCM FRU can have odd-numbered processors or even-numbered processors. If you have just replaced a 4-way MCM module, notify the customer that they can determine their processor numbering by issuing the command **lsdev -C** on the partition that is using the new processors. If the customer finds that they have new available processors, and four processors in the defined state, they can remove the defined processors by using the **rmdev** command, and then use the **cfgmgr** command.

Methods for Testing MCMs and Passthru Modules for a Short Circuit

The following testing methods are available for use depending on your testing hardware and system requirements. Use the following list to determine which of the testing methods you should use:

Method 1 — Multimeter and Original Capacitor Book (part number 11P1540)

Use this testing method if you have a handheld multimeter and the original capacitor book. Use this method only when Method 2 and Method 3 are unavailable. Refer to "Method 1. Testing MCMs and Passthru Modules for a Short Circuit" on page 777.

Method 2 — Multimeter and New Capacitor Book (part number 44P2471)

Use this testing method if you have a handheld multimeter and a new capacitor book, or any capacitor books with the necessary LGA test-support features. Refer to "Method 2. Testing MCMs and Passthru Modules for a Short Circuit" on page 780.

Method 3 — New Capacitor Book (part number 44P2471) and LGA Shorts Tester (LGA-ST) (part number 44P4107)

This method is required for systems with a 1.5 GHz MCM or higher systems. To perform this procedure, you must have a new capacitor book (or any capacitor books with the necessary LGA test-support features), and the new LGA-ST. Refer to "Method 3. Testing MCMs and Passthru Modules for a Short Circuit" on page 783.

Method 1. Testing MCMs and Passthru Modules for a Short Circuit

Performing this test ensures that a short circuit was not created when installing an MCM or a passthru module. Follow the procedure to install and use the MCM/L3 module short-circuit test tool (part number 44P0209) and a multimeter during MCM replacement.

Note: This procedure is to be performed by trained personnel only. Ensure the UEPO switch is in the Off position before performing these procedures.

MCM Installation Shorts Test, Step 1:

Attention: Be sure to record the resistance readings taken during these tests so that you can refer to them if needed.

* See "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

MCM Installation Shorts Test, Step 2:

A

Record Resistance
Record the reading while the meter leads are attached to the test card
Call this resistance "MCM Total Resistance" (MCMTR)

Enter recorded Fail Criteria*, MLR, MCMTR in the Following equation:

MCMTR - MLR > Fail Criteria

Is the left Side of the equation greater than the right side?

Yes

NO

Install another MCM/Passthru [U1.18-P1-Cx]

Examples:
0.10 > 0.40 Follow NO (Fail)
0.90 > 0.40 Follow YES (Pass)

Remove MCM/Passthru

Reinstall the MCM/Passthru

Is this the first time removed?

NO

Yes

Inspect interposer for shorts

Is the left side of the equation greater than 1 Ohm?

Yes

NO

DO NOT POWER ON
Contact Next Level Of Support

Are all the MCMs installed?

NO

Yes

B

Are shorts visible?

Yes

NO

Reject MCM/Passthru

* See the Fail Criteria value in "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

MCM Installation Shorts Test, Step 3:

B

Are there any L3 cache modules to install?

NO → Remove The Meter & Test Card

Yes → Remove Meter

Reinstall the DCAs and reassemble the system

Follow the L3 cache module replacement and and test procedures *

Power On the System and Perform a slow boot

Were any faults detected?

NO → Return System to Customer

Yes → Follow maintenance package to isolate fault. If the problem persists contact support

Update the history Log on SFP

Fold the paper with the recorded data and place inside the plug tracking chart and then fold the chart

* See "L3 Cache Modules" on page 786.

Method 2. Testing MCMs and Passthru Modules for a Short Circuit

Performing this test ensures that a short circuit was not created when installing an MCM or a passthru module. Follow the procedure to install and use a multimeter and capacitor book (Ppart number 44P2471 or later) during MCM replacement.

Note: This procedure is to be performed by trained personnel only. Ensure the UEPO switch is in the Off position before performing these procedures.

MCM Installation Shorts Test, Step 1:

Attention: Be sure to record the resistance readings taken during these tests so that you can refer to them if needed.

* See "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

MCM Installation Shorts Test, Step 2:

A

Record Resistance
Record the reading while the meter leads are attached to the Capacitor Book
Call this resistance "MCM Total Resistance" (MCMTR)

**Enter recorded Fail Criteria*, MLR, MCMTR in the
Following equation:**

MCMTR - MLR > Fail Criteria

Is the left Side
of the equasion
greater than the
right side?

Yes

NO

Install another
MCM/Passthru
[U1.18-P1-Cx]

Remove
MCM/Passthru

Reinstall the
MCM/Passthru

Examples:
0.10 > 0.40 Follow NO (Fail)
0.90 > 0.40 Follow YES (Pass)

Is this the
first time
removed?

NO

Yes

Inspect interposer
for shorts

Is the left side
of the equation
greater than
1 Ohm?

Yes

NO

Are all the
MCMs
installed?

NO

Yes

B

DO NOT POWER
ON
Contact Next Level
Of Support

Are
shorts
visible?

Yes

NO

Reject MCM/Passthru

* See the Fail Criteria value in "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

MCM Installation Shorts Test, Step 3:

B

Are there any L3 cache modules to install?

NO → Remove The Meter

Yes → Remove Meter

Remove The Meter → Reinstall the DCAs and reassemble the system → Power On the System and Perform a slow boot → Were any faults detected?

Remove Meter → Follow the L3 cache module replacement and and test procedures *

Were any faults detected?

NO → Return System to Customer → Update the history Log on SFP → Fold the paper with the recorded data and place inside the plug tracking chart and then fold the chart

Yes → Follow maintenance package to isolate fault. If the problem persists contact support

* See "L3 Cache Modules" on page 786.

Method 3. Testing MCMs and Passthru Modules for a Short Circuit

You must test the LGA-ST unit before you can begin testing the MCM and Passthru modules for a short circuit with the following steps:

1. Plug the LGA-ST test head on the test box into the 9-pin female self-test D-shell, located on the LGA-ST control box, which looks similar to the following:
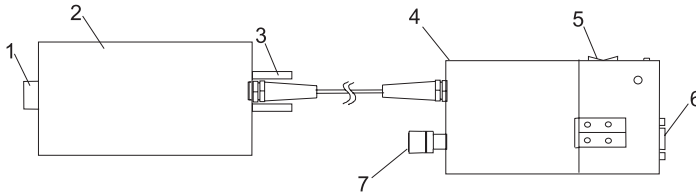
1	Tester D-shell	**5**	Toggle switch
2	Test box	**6**	Self-test D-shell
3	Jack screw	**7**	Battery access
4	Control box		

2. Perform the following steps to ensure that the LGA-ST battery is charged and that the LGA-ST is functioning properly to detect shorts:

   a. Place the toggle switch into the MCM/L3 PWR/GND position and observe the lit LEDs. Refer to the following table for valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Forward (to the MCM/L3 PWR/GND position)	Off	On	Off	On	Off	1) If Low Battery LED is on, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, the LGA-ST is defective. Replace the unit before proceeding.

   b. Place the toggle switch into the L3 PWR/PWR position and observe the lit LEDs. Refer to the following table for the valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Backward (to the L3 PWR/PWR position)	Off	Off	Off	On	Off	1) If Low Battery LED is on, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, the LGA-ST is defective. Replace the unit before proceeding.

c. Power off the system.

d. Set UEPO to OFF.

e. Disengage all DCAs from the back plane.

f. Plug the LGA-ST Tester D-Shell into the Capacitor card 9-pin D-Shell and tighten the screws.

g. Place the toggle switch into the MCM/L3 PWR/GND position and observe the lit LEDs. Refer to the following table for valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Forward (to the MCM/L3 PWR/GND position)	On	Off	On	Off	Off	1) If Low Battery LED is lit, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, disengage the Capacitor book from the system. If the LED states are not as shown in this table after the Capacitor book is disengaged, the LGA-ST is defective. Replace the unit before proceeding.

h. Place the toggle switch into the L3 PWR/PWR position and observe the lit LEDs. Refer to the following table for valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Backward (to the L3 PWR/PWR position)	Off	Off	On	Off	Off	1) If Low Battery LED is lit, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, disengage the Capacitor book from the system. If the LED states are not as shown in this table after the Capacitor book is disengaged, the LGA-ST is defective. Replace the unit before proceeding.

3. Install an MCM/Passthru module.

4. Press the toggle switch on the LGA-ST forward to the MCM/L3 PWR/GND position. This action will test the MCM/Passthru modules for power-to-ground shorts. Observe the lit LEDs on the LGA-ST and take the corresponding following actions:

Green MCM LED is lit

> This is a pass state. No further action is required.

Amber MCM LED is lit

> This is a fail state. There might be a short across the MCM/Passthru voltage and ground. Complete the following steps to correct this condition:
>
> a. Remove the MCM/Passthru module and inspect the interposer for shorts.
>
> b. Replace the MCM/Passthru module and repeat step 4. If the fail state persists, replace the MCM/Passthru.

Green L3 LED is lit

> This is a pass state. No further action is required.

Amber L3 LED is lit

> This is a fail state. There might be a short between one of the two L3 voltages and ground, which is a failing condition, or the combination of memory books, I/O books, and L3 cache modules in parallel might be creating a low resistance. To ensure that no shorts are present on the L3 modules before power the system on, perform "Method 3. Testing L3 Cache Modules for a Short Circuit" on page 804.

5. Install another MCM/Passthru module and repeat step 4 until all required MCMs are installed.

L3 Cache Modules

Handling Static-Sensitive Modules

Attention: MCM and L3 modules are sensitive to static electricity discharge. These devices are shipped in antistatic containers to prevent damage caused by electrostatic discharge.

Take the following precautions:

- Use an antistatic wrist strap while handling the device.
- Do not remove the device from the antistatic container until you are ready to install the device in the system unit.
- With the device still in its antistatic container, touch it to a metal frame of the system.
- Grasp modules by the heatsink. Avoid touching the interposer buttons.
- If you need to lay the device down while it is out of the antistatic container:
  - Lay the MCMs with the posts down on the antistatic mat.
  - Lay the L3s with the LGA connector down in the antistatic tray.

  Before picking it up again, touch the antistatic container and the metal frame of the system unit at the same time.
- Handle the devices carefully in order to prevent permanent damage.

Attention: Before you remove or replace any L3 cache module, *stop*, read and understand this entire procedure. Also, check to ensure that the MCM/L3 Label Map is installed, refer to "Installing the MCM/L3/Passthrough Plug Map" on page 760.

Attention: The L3 cache modules in this system can be attached to the backplane a maximum of three times. If an L3 cache module is removed for a fourth time, it must be replaced with a new L3 cache module. Check the *MCM/L3 Label Map* to determine how many times the module has been removed before. New L3 cache modules are shipped with a new MCM/L3 plug count adhesive replacement label. When you install a new L3 cache module, place the new label in the correct position on the *MCM/L3 Label Map*. If a new *MCM/L3 Label Map* is needed, see "Tools" on page 926 for replacement label part number.

Removal
Attention: If more than one module is to be replaced or reseated, begin with the uppermost module, replace it and then go to the next highest position module, until the lowermost module has been replaced or reseated.

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. Remove the fan chassis. See "Fan Chassis" on page 818.
3. Perform a general cleaning operation using a sash brush, (*not* the one included with the FRU kit) and vacuum cleaner (see "Tools" on page 926 for tool part numbers) to remove any accumulated dust and debris that has settled in the processor subsystem. Hold the vacuum hose near the brush to remove any debris the brush generates.
4. Note the location of the module being removed.

   Note: Arrange the four 4-position trays on the ESD mat in a pattern that corresponds to the locations of the L3 cache modules on the system backplane.

   Attention: Each L3 cache module *must* be returned to the location from which it was removed. Check the *MCM/L3 Label Map* on the system to confirm the number of times the target module has been unplugged. If it has been unplugged three times, order a new module. If this is the first removal/reseat for the module, record the serial number of the module and the date of the action.

5. Use a 5-mm nut driver to loosen the set screw in the center of the L3 module spring plates as shown in the following illustration..
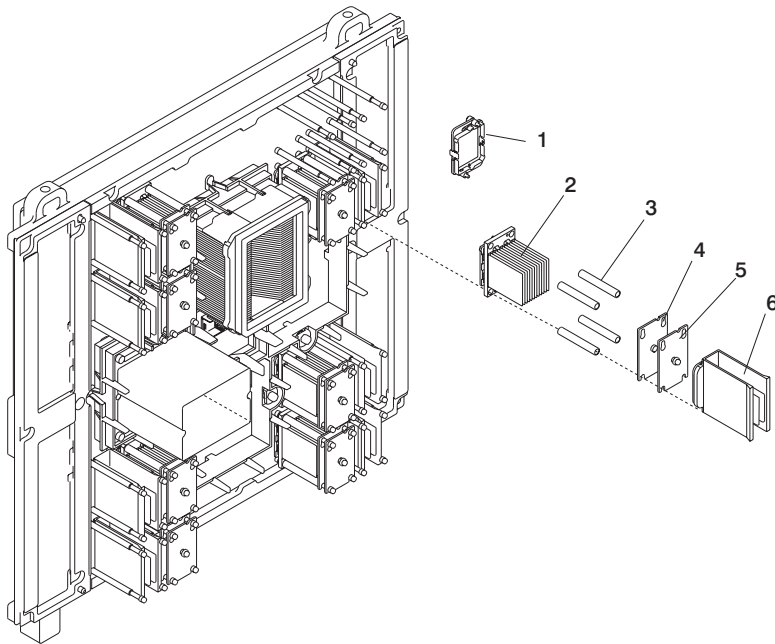
1	Protective Cover	**4**	Rear Spring Plate
2	L3 Cache Module and Heatsink	**5**	Front Spring Plate with Set Screw
3	Load Posts	**6**	L3 Filler (Used if no L3 cache module is installed)

6. Slide both plates up and pull them away from the L3 cache module.
7. Remove the sleeves from the posts.
8. Use a disposable lint-free cloth to clean the sleeves.
9. Pull the L3 cache module straight back off the posts, and place it with the interposer, facing down in the four-position tray from the tool kit.
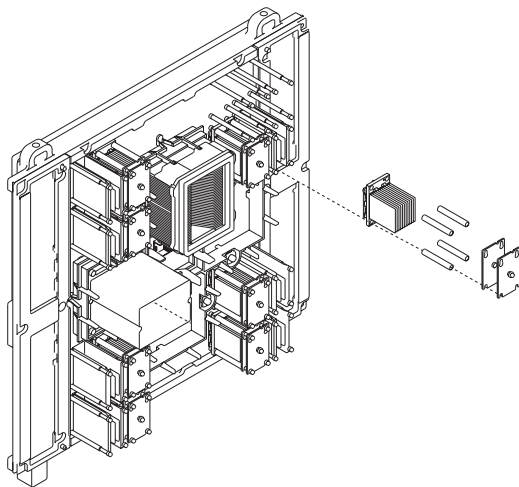
10. Clean the LGA site using the brush supplied with the new module.

Note: Before you remove the brush from its protective bag, loosen the bristles by pressing them on the ESD mat until they are 90 degrees from the handle.

Attention: Each time an L3 cache module is removed from the system backplane, the LGA site where the module connects *must* be cleaned. With the brush supplied with the replacement kit, use only downward strokes, starting in the upper left corner. Move left to right, top to bottom, using overlapping strokes as shown in the following illustration..
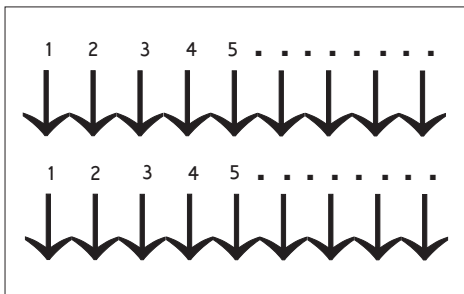
The brush must be discarded after cleaning four L3 sites.

11. Each time an L3 cache module is installed, inspect the interposer before installation. The associated interposer *must* be inspected, using a magnifying glass. The interposer is not acceptable and the module must be returned if the either of the following conditions occur:

Shorts If the button, a loop of the button wire, or an individual button wire lead extends more than three times the width of the wire outside of a connector hole chamfer (top side) or counter bore pin indent (bottom side).
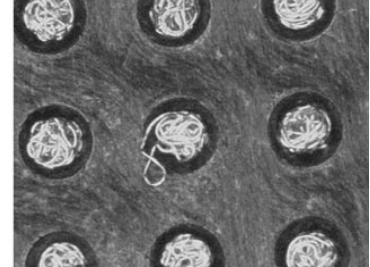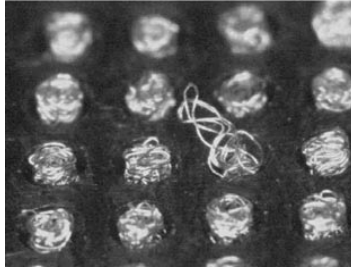
Missing buttons
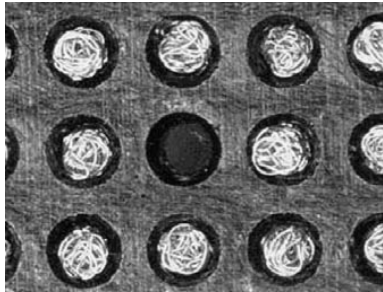
12. Record on the system log sheet the date that this L3 cache module was removed.

Returning L3 Modules: The following procedure provides handling instructions for L3 modules to be packaged and returned to the plant of manufacture.

1. If you are replacing an L3 module, use the packaging from the new module to return the old module. If the packaging is not available or does not include all the parts described below, order the following part for L3 module protective packaging:

    • 1 L3 protective package part number 7335692, which includes: 1 carton, 1 top foam cushion, 1 bottom foam cushion with 4 cavities, 1 ESD bag, 1 desiccant)

2. Place bottom foam cushion, wrapped with ESD Bag, inside the corrugated carton. Leaving the ESD bag open, place the L3 module with the cover into the bottom cushion, heatsink down. This will fit snugly into the cavity of the foam.

3. Add the desiccant and seal the ESD bag with tape. The desiccant is optional for returned parts.

4. Place the top foam cushion over the assembly inside the carton.

5. Seal the carton and ship.

Replacement or New Installation

1. Go to "Methods for Testing L3 Cache Modules for a Short Circuit" on page 792 and install the MCM/L3 module short-circuit test tool. Use the test tool during the L3 cache module replacement procedure to ensure that the L3 cache modules are installed without a short circuit. If you install an L3 cache module and encounter a short circuit, the L3 cache you installed must be replaced.

2. If installing a new L3 cache module, perform a general cleaning operation, using a sash brush, part number 450732 (*not* the one included with the FRU kit) and vacuum cleaner to remove any accumulated dust and debris that has settled in the processor subsystem. Hold the vacuum hose near the brush to remove any debris the brush generates, then remove the L3 filler from the site where the new L3 cache module is to be located.

3. Loosen the captive thumbscrews on the protective cover, and remove the cover from the new L3 cache module as shown in the following illustration.
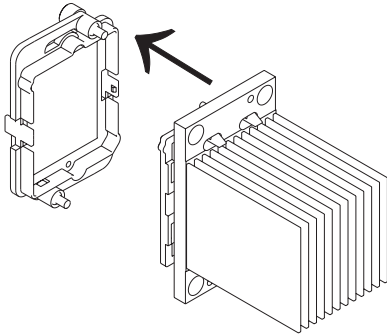
4. Align the flat corner on the L3 cache module to match the outline on the system backplane. Carefully slide the L3 cache module straight onto the posts until it meets the system backplane.

5. If you are installing a new L3 cache module, replace the sleeves that you removed earlier with the new sleeves provided with the L3 cache module kit. If you are reseating an existing module, use a lint-free cloth to wipe any dust from the sleeves that you removed earlier.

6. Be sure to align the notches at the upper right corner of each spring plate as shown in the following illustration. Replace the spring plates that you removed earlier with the new spring plates provided with the L3 cache module kit.
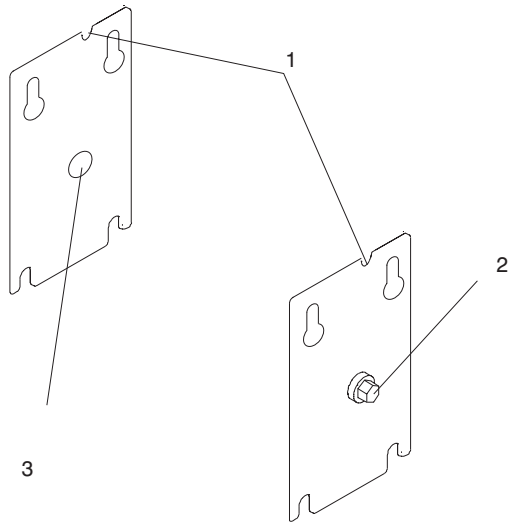
1	Notch on upper right corner
2	5-mm set screw
3	Reinforced center

7. Use your 5-mm nut driver to tighten the set screw in the center of the L3 cache module spring plates until the screw is seated.

   Check the MCM/L3 module short-circuit test tool to ensure that short circuit was not created when the L3 cache module was installed.

   If this is the last L3 cache module you are installing, remove the MCM/L3 module short-circuit test tool and meter.

8. Remove the primary I/O book (see "I/O Books and I/O Blanks" on page 761) and replace the VPD card that was provided with the L3 cache module.
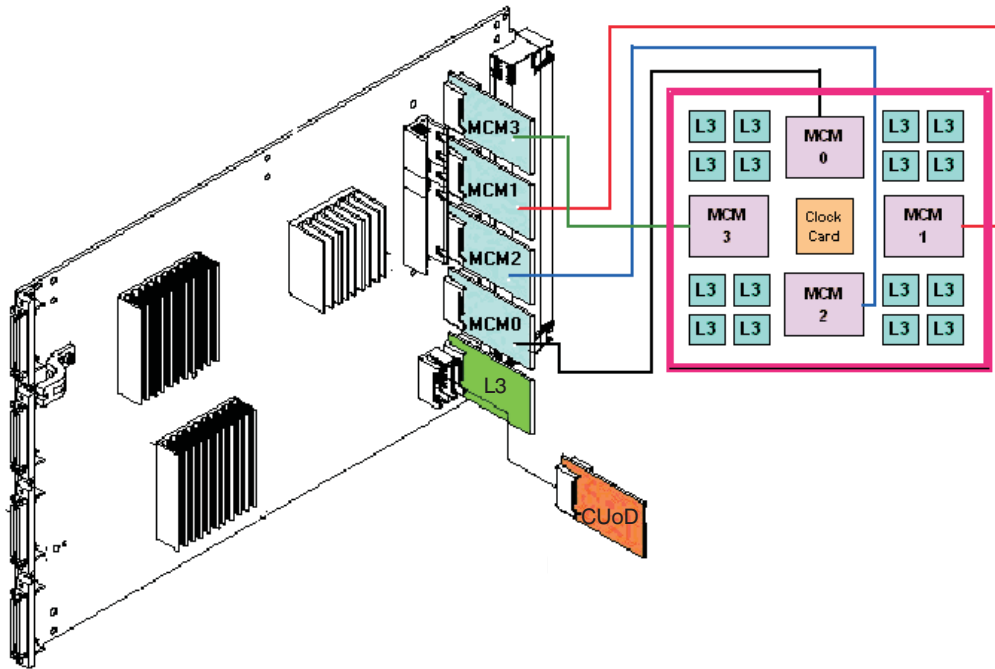
9. Replace the primary I/O book.
10. Replace the fan chassis. See "Fan Chassis" on page 818.
11. Turn on power as described in "Powering the System On" on page 748.
12. If an MCM or L3 cache module was just added or replaced, go to the service processor menu and select System Information Menu, then select MCM/L3 Interposer Plug Count Menu.

    If the MCM/L3 Interposer Plug Count Menu is not available, the system firmware level is too old, and the MCM plug count must be recorded as described in "Installing the MCM/L3/Passthrough Plug Map" on page 760 and "Using this Label" on page 760. You can also upgrade the system firmware to the latest level to make the MCM/L3 Interposer Plug Count Menu available, and then continue with 13.

13. Find the index number that corresponds to the module that was just added or replaced and enter the new plug count that was included in the FRU or MES kit. If the plug count is not included with the FRU, enter the number & as the new plug count to account for the number of times the module was plugged during the manufacturing process. If the MCM/L3 was replaced from field spares, enter the number 8. Exit the menu completely before powering on the system.

Methods for Testing L3 Cache Modules for a Short Circuit

The following testing methods are available for use depending on your testing hardware and system requirements. Use the following list to determine which of the testing methods you should use:

Method 1. Multimeter and Original Capacitor Book (part number 11P1540)
Use this testing method if you have a handheld multimeter and the original capacitor book. Use this method only when Method 2 and Method 3 are unavailable. Refer to "Method 1. Testing L3 Cache Modules for a Short Circuit" on page 794.

Method 2. Multimeter and New Capacitor Book (part number 44P2471)

Use this testing method if you have a handheld multimeter and a new capacitor book, or any capacitor books with the necessary LGA test support features. Refer to "Method 2. Testing L3 Cache Modules for a Short Circuit" on page 799.

Method 3. New Capacitor Book (part number 44P2471) and LGA Shorts Tester (LGA-ST) (part number 44P4107)

This method is required for systems with a 1.5 GHz MCM or higher systems. To perform this procedure, you must have a new capacitor book, (or any capacitor books with the necessary LGA test support features), and the new LGA-ST. Refer to "Method 3. Testing L3 Cache Modules for a Short Circuit" on page 804.

Method 1. Testing L3 Cache Modules for a Short Circuit

Performing this test ensures that a short circuit was not created when an L3-cache module is installed. Follow this procedure to install and use the MCM/L3 module short-circuit test tool (part number 44P0209) and a multimeter during L3-cache module replacement.

Note: This procedure is to be performed by trained personnel only. Ensure the UEPO switch is in the Off position before performing this procedure.

L3 Cache Shorts Test, Step 1:

Attention: Be sure to record the resistance readings taken during these tests so that you can refer to them if needed.

* See "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

L3 Cache Shorts Test, Step 2:

C

Connect Meter
"V" to Test Card "1.9V L3 LGA" (Blue Jack)
Meter "COM" to Test Card either "COMMON RET" (Black Jack)

Record Resistance.
Call this resistance" 1.9v L3 Total Resistance"(1.9vL3TR)

Enter recorded Fail Criteria *, MLR, 1.9vL3TR in the equation below
1.9vL3TR - MLR > Fail Criteria

Install another L3 cache module [U1.18-P1-Cx]

Is the left Side of the equation Greater than the Right Side? — Yes / NO

Examples:
0.10 > 0.40 Follow NO (Fail)
0.90 > 0.40 Follow YES (Pass)

Reinstall the L3 cache module

Is the left Side of the equation greater than 1 Ohm? — Yes / NO

Contact Next Level Of Support

Has this L3 been removed & reinstalled — Yes / NO

Remove L3 cache module

Inspect Interposer for shorts

Are all the memory & I/O disengaged? — Yes / NO

Reject the L3 cache module

Are Shorts Visible? — Yes / NO

Are all The Memory Disengaged? — Yes / NO

Disengage One I/O Book
Primary I/O Book First
Secondary I/O Books second

Disengage A Memory Book
Memory are removed one at a time

D

L3 Cache Shorts Test, Step 3:

D

Connect Meter
"V" to Test Card "1.5v L3 LGA" (White Jack)
Meter "COM" to Test Card either "COMMON RET" (Black Jack)

Record Resistance.
Call this resistance" 1.5v L3 Total Resistance"(1.5vL3TR)

Enter recorded Fail Criteria *, MLR, 1.5vL3TR in the equation below
1.5vL3TR - MLR > Fail Criteria

Is the left Side of the equation Greater than the Right Side? Yes NO

Examples:
0.10 > 0.40 Follow NO (Fail)
0.90 > 0.40 Follow YES (Pass)

Is the left Side of the equation greater than 1 Ohm Yes NO

Has this L3 been removed & reinstalled Yes NO

Remove L3 cache module

Inspect interposer for shorts

Are all the memory & I/O Disengaged? Yes NO

Reject the L3 cache module

Are Shorts Visible? Yes NO

Reinstall the L3 cache module

C

Are all the memory & I/O disengaged? Yes NO

DO NOT POWER ON
Contact Next Level Of Support

Are all the Memory Disengaged? Yes NO

Disengage One I/O Book
Primary I/O Book First
Secondary I/O Books second

Disengage A Memory Book
Memory are removed one at a time

E **C**

* See "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

L3 Cache Shorts Test, Step 4:

(E)

Connect Meter
"V" to Test Card "1.9v L3 LGA" (Blue Jack)
Meter "COM" to Test Card either "1.5V" (White Jack)

Record Resistance
Record the resistance reading on your meter while
the leads are attached to the shorts test card
Call this resistance "1.9 to 1.5 L3 Total Resistance" (1.9/1.5L3TR)

Enter recorded 1.9/1.5L3TR, and MLR in the equation below
1.9/1.5L3TR - MLR > (1.0 ohms)

Is the left Side
Of the equation
Greater Than the
Right Side ? — Yes / NO

Examples:
0.8 > 1.0 Follow NO (Fail)
6.0 > 1.0 Follow YES (Pass)

Has this L3
been
removed &
Reinstalled? — Yes / NO

Remove L3
cache module

Inspect L3 cache
module interposer
for shorts

Are all the
L3 cache modules
Installed? — Yes / NO

Are Shorts
Visible? — Yes / NO

Reject the L3
cache module

Install another L3 cache module
[U1.18-P1-Cx]

Reinstall the L3
cache module

(F)   **(C)**   **(C)**

L3 Cache Shorts Test, Step 5:

```
                                    ( F )
                                      |
                                      v
                              /                \
                   NO        /  Does an MCM need  \        Yes
         +-----------------<    to be installed?   >----------------+
         |                 \                      /                 |
         |                  \                    /                  |
         v                     \              /                     v
+--------------------+                              +---------------------------------+
| Remove The Meter   |                              | Follow the MCM Installation      |
| & Test Card        |                              | Shorts Test Procedure            |
+--------------------+                              +---------------------------------+
         |                                                          |
         v                                                          |
+--------------------+                                              |
| Reinstall the DCAs |                                              |
| and reassemble the |                                              |
| system             |                                              |
+--------------------+                                              |
         |                                                          |
         v                                                          |
+---------------------------------+                                 |
| Power On the System and Perform |                                 |
| a slow boot                     |                                 |
+---------------------------------+                                 |
         |                                                          |
         v                                                          |
              /              \                                      |
   NO        /  Were any faults \     Yes                           |
 +---------<    Detected?         >--------+                        |
 |          \                    /         |                        |
 |           \                /            |                        |
 v                                         v                        |
+----------------------+        +---------------------------+       |
| Return System to     |        | Follow maintenance        |       |
| Customer             |        | package to isolate fault. |       |
+----------------------+        | If the problem persists   |       |
 |                              | contact support           |       |
 v                              +---------------------------+        |
+----------------------+                                            |
| Update the history   |                                            |
| Log on SFP           |                                            v
+----------------------+                                         ( A )
 |
 v
+----------------------+
| Fold the paper with  |
| the recorded data    |
| and place inside the |
| plug tracking chart  |
| and then fold the    |
| chart                |
+----------------------+
```

Method 2. Testing L3 Cache Modules for a Short Circuit

Performing this test ensures that a short circuit was not created when an L3-cache module is installed. Follow this procedure to install and use the capacitor book (part number 44P2471) and a multimeter during L3-cache module replacement.

Note: This procedure is to be performed by trained personnel only. Ensure the UEPO switch is in the Off position before performing this procedure.

L3 Cache Shorts Test, Step 1:

Attention: Be sure to record the resistance readings taken during these tests so that you can refer to them if needed.

* See "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

L3 Cache Shorts Test, Step 2:

C

Connect Meter
"V" to Capacitor Book TP-3 (L3-L)
Meter "COM" to Capacitor Book TP-5 (RTN)

Record Resistance.
Call this resistance" 1.9v L3 Total Resistance"(1.9vL3TR)

Enter recorded Fail Criteria *, MLR, 1.9vL3TR in the
equation below
1.9vL3TR - MLR > Fail Criteria

Install another L3
cache module
   [U1.18-P1-Cx]

Is the left Side of
the equation Greater
than the Right Side?   NO   Yes

Examples:
0.10 > 0.40 Follow NO (Fail)
0.90 > 0.40 Follow YES (Pass)

Reinstall the
L3 cache module

Is the left Side
of the equation
greater than 1
Ohm?   NO

Yes

Has this L3
been removed &
reinstalled   Yes   NO

Contact Next
Level Of Support

Remove L3
cache module

Inspect Interposer
for shorts

Are all the
memory & I/O
disengaged?   Yes   NO

Reject the L3
cache module

Are Shorts
Visible?   Yes   NO

Are all
The Memory
Disengaged?   Yes   NO

Disengage One I/O Book
Primary I/O Book First
Secondary I/O Books second

Disengage A Memory Book
Memory are removed one at a time

D

L3 Cache Shorts Test, Step 3:

(D)

Connect Meter
"V" to Capacitor Book TP-4 (L3-D)
Meter "COM" to Capacitor Book TP-5 (RTN)

Record Resistance.
Call this resistance" 1.5v L3 Total Resistance"(1.5vL3TR)

Enter recorded Fail Criteria *, MLR, 1.5vL3TR in the equation below
1.5vL3TR - MLR > Fail Criteria

Is the left Side of the equation Greater than the Right Side?
— Yes
— NO

Examples:
0.10 > 0.40 Follow NO (Fail)
0.90 > 0.40 Follow YES (Pass)

Has this L3 been removed & reinstalled?
— Yes
— NO

Is the left Side of the equation greater than 1 Ohm
— Yes
— NO

Remove L3 cache module

Inspect interposer for shorts

Are all the memory & I/O Disengaged?
— Yes
— NO

Are Shorts Visible?
— Yes
— NO

Reject the L3 cache module

Reinstall the L3 cache module

(C)

DO NOT POWER ON
Contact Next Level Of Support

Are all the memory & I/O disengaged?
— Yes
— NO

Are all the Memory Disengaged?
— Yes
— NO

Disengage One I/O Book
Primary I/O Book First
Secondary I/O Books second

Disengage A Memory Book
Memory are removed one at a time

(E) **(C)**

* See "Shorts Test Qualified Service Meters and Fail Criteria" on page 806.

L3 Cache Shorts Test, Step 4:

(E)

```
Connect Meter
"V" to Capacitor Book TP-3 (L3-L)
"COM" to Capacitor Book TP-4 (L3-D)
```

```
Record Resistance
Record the resistance reading on your meter while
the leads are attached to the shorts test card
Call this resistance "1.9 to 1.5 L3 Total Resistance" (1.9/1.5L3TR)
```

```
Enter  recorded 1.9/1.5L3TR, and MLR in the equation below
1.9/1.5L3TR - MLR > (1.0 ohms)
```

Is the left Side
Of the equation
Greater Than the
Right Side ?

Yes   NO

```
Examples:
0.8 > 1.0 Follow NO (Fail)
6.0 > 1.0 Follow YES (Pass)
```

Has this L3
been
removed &
Reinstalled?

Yes   NO

```
Remove L3
cache module
```

```
Inspect L3 cache
module interposer
for shorts
```

Are all the
L3 cache modules
Installed?

Yes   NO

Are Shorts
Visible?

Yes   NO

```
Reject  the L3
cache module
```

```
Install another L3 cache module
[U1.18-P1-Cx]
```

```
Reinstall the L3
cache module
```

(F)   **(C)**   **(C)**

L3 Cache Shorts Test, Step 5:

```
                                    ( F )
                                      |
                                      v
                  NO            /  Do MCM need to  \            Yes
          +-------------------<     be installed    >-------------------+
          |                    \                    /                   |
          v                                                             v
+------------------------+                              +------------------------------------+
|    Remove The Meter    |                              | Follow the MCM Installation  Shorts Test |
+------------------------+                              |             Procedure              |
          |                                             +------------------------------------+
          v                                                             |
+------------------------+                                              |
| Reinstall the DCAs and reassemble the |                              |
|            system      |                                             |
+------------------------+                                              |
          |                                                             |
          v                                                             |
+------------------------+                                              |
| Power On the System and Perform a slow boot |                        |
+------------------------+                                              |
          |                                                             |
          v                                                             |
                  NO            /  Were any faults  \   Yes             |
          +-------------------<     Detected?        >----+             |
          |                    \                    /     |             |
          v                                               v             |
+------------------------+                  +--------------------------+|
| Return System to Customer |               | Follow maintenance       ||
+------------------------+                  | package to isolate fault. If |
          |                                 | the problem persists     ||
          v                                 | contact support          ||
+------------------------+                  +--------------------------+|
| Update the history Log on |                                          |
|           SFP          |                                             v
+------------------------+                                          ( A )
          |
          v
+------------------------+
| Fold the paper with the |
| recorded data and place |
| inside the plug tracking |
| chart  and then fold the |
|           chart        |
+------------------------+
```

Method 3. Testing L3 Cache Modules for a Short Circuit

You must test the LGA-ST unit before you can begin testing the MCM and Passthru modules for a short circuit with the following steps:

1. Plug the LGA-ST test head on the test box into the 9-pin female self-test D-shell, located on the LGA-ST control box, which looks similar to the following:

1	Test head	**5**	Toggle switch
2	Test box	**6**	Self-test D-shell
3	Jack screw	**7**	Battery access
4	Control box		

2. Perform the following steps to ensure that the LGA-ST battery is charged and that the LGA-ST is functioning properly to detect shorts:

   a. Place the toggle switch into the MCM/L3 PWR/GND position and observe the lit LEDs. Refer to the following table for valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Forward (to the MCM/L3 PWR/GND position)	Off	On	Off	On	Off	1) If Low Battery LED is on, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, the LGA-ST is defective. Replace the unit before proceeding.

   b. Place the toggle switch into the L3 PWR/PWR position and observe the lit LEDs. Refer to the following table for the valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Backward (to the L3 PWR/PWR position)	Off	Off	Off	On	Off	1) If Low Battery LED is on, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, the LGA-ST is defective. Replace the unit before proceeding.

c. Power off the system.

d. Set UEPO to OFF.

e. Disengage all DCAs from the back plane.

f. Plug the LGA-ST Tester D-Shell into the Capacitor card 9-pin D-Shell and tighten the screws.

g. Place the toggle switch into the MCM/L3 PWR/GND position and observe the lit LEDs. Refer to the following table for valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Forward (to the MCM/L3 PWR/GND position)	On	Off	On	Off	Off	1) If Low Battery LED is lit, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, disengage the Capacitor book from the system. If the LED states are not as shown in this table after the Capacitor book is disengaged, the LGA-ST is defective. Replace the unit before proceeding.

h. Place the toggle switch into the L3 PWR/PWR position and observe the lit LEDs. Refer to the following table for valid LED states:

Toggle Switch Position	MCM Green LED	MCM Amber LED	L3 Green LED	L3 Amber LED	Battery Low Amber LED	Action
Backward (to the L3 PWR/PWR position)	Off	Off	On	Off	Off	1) If Low Battery LED is lit, or if no LEDs are lit, replace the battery before proceeding. 2) If the battery appears to be functioning and the LEDs are not lit as shown in this table, disengage the Capacitor book from the system. If the LED states are not as shown in this table after the Capacitor book is disengaged, the LGA-ST is defective. Replace the unit before proceeding.

3. Install an L3 module.

4. Press the toggle switch on the LGA-ST forward to the MCM/L3 PWR/GND position. This action will test the L3 modules for power-to-ground shorts. Observe the lit LEDs on the LGA-ST and take the corresponding following actions:

Green L3 LED is lit
> This is a pass state. No further action is required.

Amber L3 LED is lit
> This is a fail state. There might be a short between one of the two L3 voltages and ground, which is a failing condition, or the combination of memory books, I/O books, and L3 cache modules in parallel might be creating a low resistance.
>
> Complete the following steps to correct this condition:
> a. Disengage memory books followed by I/O books one at a time.
> b. Repeat step 2a on page 804 through step 2h on page 805 until either the L3 test results in a pass state, or all memory and I/O are disengaged and the L3 test remains in a fail state.
> c. If the L3 module test remains in a fail state after all memory and I/O are disengaged, remove the L3 module and inspect the interposer for shorts.
> d. Reinstall the L3 module once and repeat the test. If the fail persists, replace the L3 module.

Green MCM LED is lit
> This is a pass state. No further action is required.

Amber MCM LED is lit
> This is a fail state. There might be a short across the MCM voltage and ground. Perform the "Method 3. Testing MCMs and Passthru Modules for a Short Circuit" on page 783 and correct any short conditions before powering on.

5. Place the toggle switch into the L3 PWR/PWR position.

Green and Amber MEM LEDs are not lit
> Power is removed from these circuits when the switch is in the L3 PWR/PWR position.

Green L3 LED is lit
> This is a pass state. No further action is required.

Amber L3 LED is lit
> This is a fail state. There is a short between the two L3 power domains. Complete the following steps to correct this condition:
> a. Remove the L3 module and inspect the interposer for shorts.
> b. Reinstall the L3 module once and repeat the test. If the fail condition persists, replace the L3 module.

6. Install another L3 module and repeat step 3 on page 805 through step 5 until all required L3 modules are installed.

Shorts Test Qualified Service Meters and Fail Criteria

Manufacturer	Model	Range	Accuracy @ 1.0 ohms or less	Fail Criteria
Fluke	8060A	200 Ohms	+/-0.04Ω	+0.40Ω
Fluke	8060A/AA	200 Ohms	+/-0.04Ω	+0.40Ω
Fluke	8062A	200 Ohms	+/-0.04Ω	+0.40Ω
Fluke	187	500 Ohms	+/-0.10Ω	+0.40Ω
Fluke	189	500 Ohms	+/-0.10Ω	+0.40Ω
Fluke	83 (original models)	400 Ohms	+/-0.10Ω	+0.40Ω
Fluke	85 (original models)	400 Ohms	+/-0.10Ω	+0.40Ω

Manufacturer	Model	Range	Accuracy @ 1.0 ohms or less	Fail Criteria
Fluke	87 (original models)	400 Ohms	+/-0.10Ω	+0.40Ω
Fluke	87-4	500 Ohms	+/-0.10Ω	+0.40Ω
Fluke	89-4	500 Ohms	+/-0.10Ω	+0.40Ω
+/-0.20 Accuracy				
Fluke	10	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	11	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	110	600 Ohms	+/-0.20Ω	+0.50Ω
Fluke	111	600 Ohms	+/-0.20Ω	+0.50Ω
Fluke	112	600 Ohms	+/-0.20Ω	+0.50Ω
Fluke	12	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	12B	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	16	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	175	600 Ohms	+/-0.20Ω	+0.50Ω
Fluke	177	600 Ohms	+/-0.20Ω	+0.50Ω
Fluke	179	600 Ohms	+/-0.20Ω	+0.50Ω
Fluke	18	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	21-2	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	21-3	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	23-2	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	26-3	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	29-2	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	70-2	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	70-3	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	73	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	73-2	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	73-3	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	75	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	75-2	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	75-3	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	76	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	77	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	77-2	320 Ohms	+/-0.20Ω	+0.50Ω
Fluke	79-2	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	79-3	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	83 (with CAT III front panel marking)	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	83-3	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	85 (with CAT III front panel marking)	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	85-3	400 Ohms	+/-0.20Ω	+0.50Ω

Manufacturer	Model	Range	Accuracy @ 1.0 ohms or less	Fail Criteria
Fluke	87 (with CAT III front panel marking)	400 Ohms	+/-0.20Ω	+0.50Ω
Fluke	87-3	200 Ohms	+/-0.20Ω	+0.50Ω

Capacity Upgrade on Demand (CUoD) VPD Module
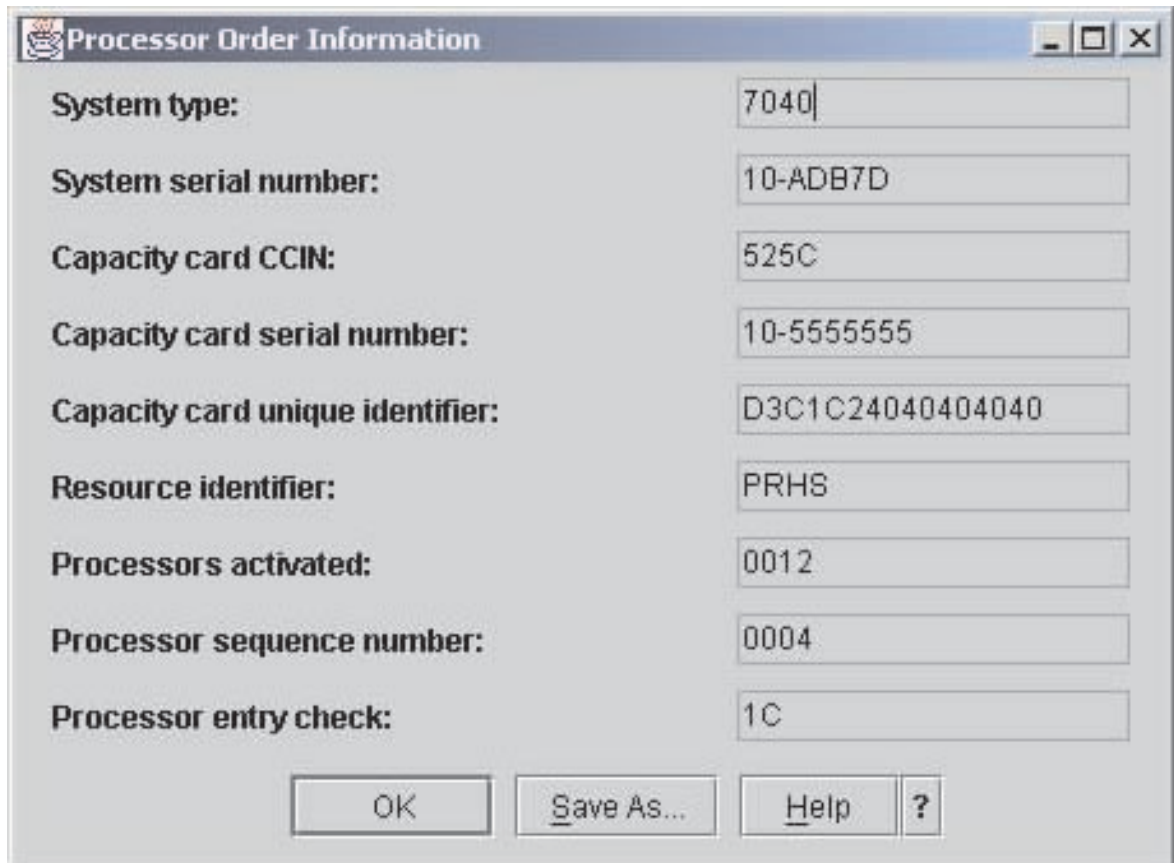
Use the following instructions to replace the CUoD VPD module. This action should only be taken if the VPD module is listed as a failing FRU. For more information about FRUs and error codes, see Chapter 5, "Error Code to FRU Index", on page 341.

1. Power off the system and ensure standby power has been removed by moving the red switch to the OFF position.

2. Remove the primary I/O book (for more information, see "I/O Books and I/O Blanks" on page 761) and open the cover to expose the VPD cards.

3. Remove and replace the CUoD VPD card, which is located next to the installed L3 VPD modules, with the procedures in "VPD Card" on page 811.

4. Replace the primary I/O book in the system and connect the cables with the procedures in I/O Books and I/O Blanks "Replacement" on page 764.

5. Power on the system.

6. Move the red switch into the ON position.

7. Contact service support to obtain the correct processor activation codes for the customer.
   - If the customer is *entitled* to any processor activations, proceed to step 9.
   - If the customer is *not entitled* to any processor activations, service support will give you the zero activation code. Complete step 8.

8. After you complete this step, the procedure is complete for this customer.
   a. Right-click on the name of the managed system in the Contents area of the Web-based System Manager window. The name of the system displays as the system's serial number.
   b. From the menu that displays, select the following options, in the following order:
      1) **Capacity Upgrade on Demand**
      2) **Processor**
      3) **Processor Activate**

      The Activate CUoD Processors window displays.
   c. Enter the 34-character string of zeros (0s) into the **Activation Code** field.
   d. Reboot the system and return control of the system to the customer.

9. Service support will ask for system information to generate an activation code. To access this information, complete the following steps:
   a. Right-click on the name of the managed system in the Contents area of the Web-based System Manager window. The name of the system displays as the system's serial number.
   b. From the menu that displays, select the following options, in the following order:
      1) **Capacity Upgrade on Demand**
      2) **Processor**
      3) **Processor Capacity Settings**

      The Processor Capacity Settings window displays.

c. Click the **Display Order Information** button in the Processor Capacity Settings window. This will display the Processor Order Information panel, which appears similar to the following:

d. Dictate the contents of each field on this panel to service support.

10. After service support generates the activation code, go to the Activate CUoD Processors menu by completing the following steps:

    a. Right-click the name of the managed system in the Contents area of the Web-based System Manager window. The name of the system displays as the system's serial number.

    b. From the menu that displays, select the following options, in the following order:

       1) **Capacity Upgrade on Demand**
       2) **Processor**
       3) **Processor Activate**

       The Activate CUoD Processors window displays.

11. Type the 34-character activation code that service support dictates to you into the **Activation Code** field.

12. Return to the Processor Capacity Settings window by completing steps a and b in 9 on page 809. Verify that the number of processors shown in this window match the number of processors service support tells you the customer is entitled to.

    • If the number of processors match, reboot the system and return control of the system to the customer.

    • If the number of processors does **not** match, return to the Processor Order Information panel and verify the information with service support.

VPD Card

Notes:

1. The MCM module and its associated VPD card are a single FRU and must be replaced as a set.
2. There is only one VPD card for all of the L3 modules. Replacing any L3 module requires replacing the associated VPD card.

The VPD cards are located in the primary I/O book.

Removal

1. Remove the primary I/O book (see "I/O Books and I/O Blanks" on page 761).
2. Use a T10 torx screw to remove the short cover near the connectors.
3. Locate the VPD card that must be replaced.
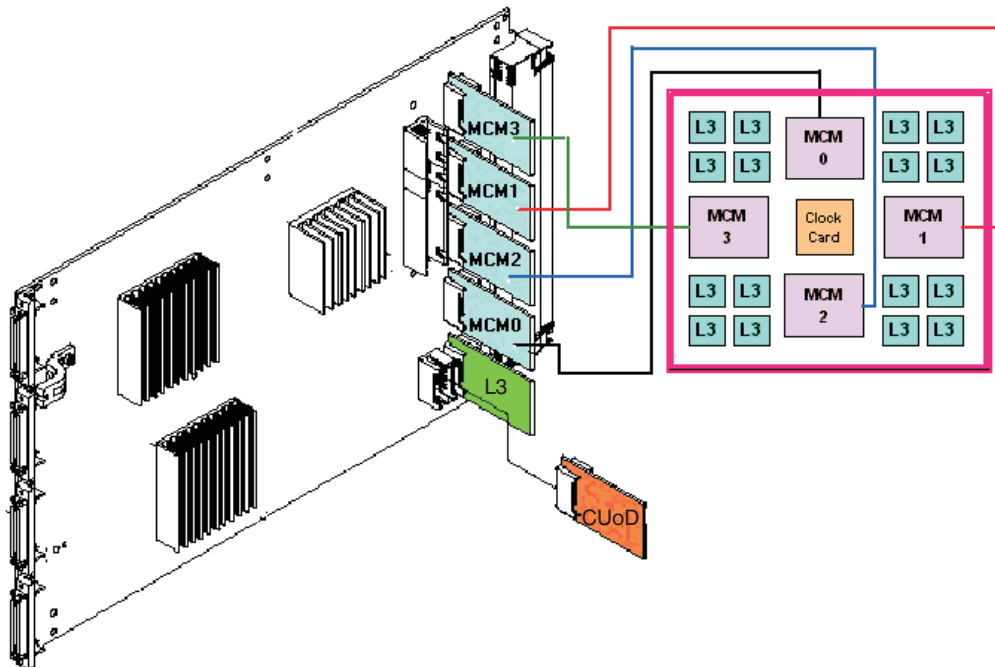
4. Remove the VPD card for the associated MCM or L3 modules.

Replacement
Replace in reverse order with the VPD card that was provided with the new MCM or L3 modules.

System Clock Card

Removal

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. Remove the fan chassis. See "Fan Chassis" on page 818.
3. Squeeze the tabs on the clock card, and pull the card straight out as shown in the following illustration.
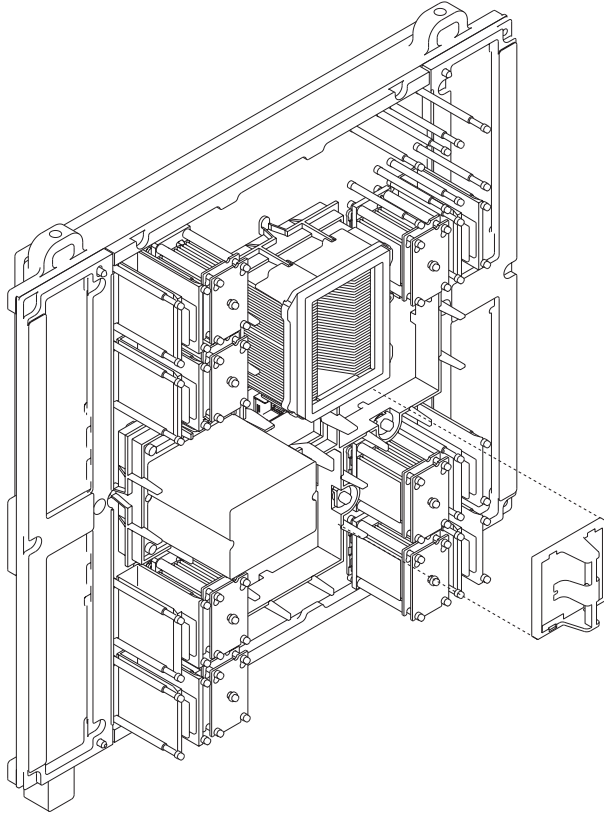
4. Clean the system board as described at the start of this procedure

Replacement

Note: Be sure to align the guide feature on the card with the guide feature on the system board.

1. Squeeze the tabs on the clock card and push the card straight in.
2. Replace the fan chassis. See "Fan Chassis" on page 818.
3. Turn on power as described in "Powering the System On" on page 748.

Processor Subsystem Chassis

CAUTION:
This unit weighs more than 55 kg (121.2 pounds). Material handling systems such as levers, slings, or lifts are required to safely move it. When this is not possible, specially trained persons or services (such as riggers or movers) must be used.
C06

Three people are required to handle this operation: one person to push the chassis, and two people to pull the chassis.

Removal
Attention: All components must be replaced to the location from which they were removed. Before replacing processor subsystem chassis (backplane), check with your support center to ensure you have been directed to replace the processor subsystem chassis (backplane) by a valid error code in Chapter 5, "Error Code to FRU Index", on page 341.

Attention: This process requires:
- A safe area reserved to store parts that are removed from the system during this procedure.
- The use of a lift tool (part number 09P2481) and lift-plate assembly tool (part number 11P4369).
- The following components must be removed from the processor subsystem chassis to reduce its weight to the minimum.
  - DCA Books
  - Capacitor Books
  - I/O Books
  - Memory Books
  - Processor Fan Assemblies
  - MCM(s) (remove the MCMs only if the chassis is to be replaced)
  - L3 Cache (remove the L3 cache only if the chassis is to be replaced)
  - System Clock Card
- The lift tool wheels must be chocked to prevent it from moving during the operation. The frame must not be on its casters, and the leveling pads must be engaged to prevent the frame from moving during the operation.

1. Read all safety instructions before performing this operation. Unpack the lift tool and follow assembly instructions included with the tool. Inspect the tool for damage. Do not perform the removal procedure with a damaged lift tool. Replace the blue lift plate with the orange lift plate (part number 11P4369). Orient the two round holes in the lift plate to the side of the lift tool that will be closest to the frame.
2. Turn off power as described in "Powering Off and Powering On the System" on page 747.
3. Open the rack doors and remove them from the rack.
4. Verify that all cables are labeled. If not, label all cables and components along with their location at the front and rear of the system.
5. Unplug all power cables from the line power source.

   Attention: Because this procedure is performed with power removed from the system, references to using the white or green service buttons on the UEPO switch do not apply during the remainder of this procedure.
6. Unplug any cables attached to the I/O books and processor subsystem DCAs.
7. At the back of the system, remove the safety bars from the I/O books and blanks, using an allen wrench on the captive screws.
8. Remove the I/O books (and blanks if applicable). See "I/O Books and I/O Blanks" on page 761.
9. Remove the DCAs and capacitor books (and blanks if applicable). See "Processor Subsystem DCA (Distributed Converter Assembly) Books and DCA Blanks" on page 767.
10. At the front of the system, remove the safety bars from the memory books and blanks.

11. Remove the memory books (and blanks if applicable). See "Memory Books and Memory Blanks" on page 815.

12. Remove the four fan assemblies. See "Processor Fan Assemblies" on page 818.

13. Remove the fan chassis. See "Fan Chassis" on page 818.

14. Remove the MCM modules. See "MCM Module (Processor) and Passthru Modules" on page 769.

15. Remove the L3 modules. See "L3 Cache Modules" on page 786.

16. Remove the clock card. See "System Clock Card" on page 812.

17. Remove the media chassis. See "Media Subsystem Chassis" on page 903.

18. Remove two frame extender mounting bolts from EIA position 17 (10-mm bolt).

19. Remove the UEPO switch. See "Unit Emergency Power Off (UEPO) Card Assembly" on page 757.

20. Using an 8-mm extension socket, remove the screws attaching the hold-down bracket to the vertical EIA rails at the rear of the system. Remove the bracket and store it in a safe place.

    Note: The rear screws are used to mount the hold-down bracket.

21. Using an 8-mm extension socket, remove the screws attaching the chassis to the vertical EIA rails at the front of the system.

22. Position the lift tool at the front of the rack, and ensure that the extender arms on the lift plate are on the side facing the frame. Align the lift tool such that processor subsystem chassis will not be blocked (at the lip of the orange lift plate) from removal.

23. Raise the plate to a height such that the lift plate is just below the base of the processor subsystem chassis. Release the pins on the lift plate, and fully extend the center portion of the plate toward the processor subsystem chassis and lock it in place. Release pins on the extender arms and position them on both left and right side, arms must fit around the frame extenders and lock in place (do not adjust the lift tool once these arms are locked in place). Engage the lift tool brake. Install wheel chocks on lift tool casters.

    Note: When you attach the arms to the frame, ensure that any cables are clear of the extender arms.

24. One person should gently push the processor subsystem chassis toward the tool from the rear of the system (do not bend the vertical processor-subsystem chassis support bars). Two people should gently pull and guide the processor subsystem chassis onto the lift plate. The processor subsystem chassis must be removed far enough to clear the front face of the frame. Use the tie-down strap to hold the processor subsystem chassis to the lift plate. Retract the extender arms and center portion of lift plate.

25. Lower the processor subsystem chassis to the bottom position of the lift tool.

26. Remove the wheel chocks and release the brake. Flip the crank handle 180 degrees. Carefully move the lift tool with the processor subsystem chassis to the staging area. The brake and wheel chocks must be in place when transferring the processor subsystem chassis to or from the packaging material.

Replacement

Note: If you are replacing this assembly with a new assembly, the manufacturing label with the machine type, model number, and the serial number for the subsystem must be ordered to apply to the new part. For information on replacement labels, see Chapter 10, "Parts Information", on page 905.

Attention: Look for small amounts of debris on the connecting surfaces between the backplane and processor modules. Mating the two surfaces is critical for the processor to function properly.

1. Position the lift tool such that the new processor subsystem chassis can be moved onto the lift plate.

2. Install the wheel chocks and engage the brake.

3. Position the plate at the correct level, and move the new processor subsystem chassis onto the tool with the rear side flush with the lift plate. Strap the processor subsystem chassis to the lift plate using the tie-down strap.

4. Position the lift tool as close as possible to the front of the rack.

5. Raise the lift tool until it is level with the rails.

6. Release the pins on the lift plate and fully extend the center portion of the plate toward the frame and lock it in place. Release the pins on the extender arms and position them on both left and right side. The arms must fit around the frame extenders and lock in place (do not adjust the lift tool after these arms are locked in place). Engage the lift tool brake. Install wheel chocks on lift tool casters.

   Note: When you attach the arms to the frame, ensure that any cables are clear of the extender arms.

7. Remove the tie-down strap. One person should gently pull the processor subsystem chassis into the frame from the rear of the system (do not bend the vertical processor-subsystem chassis support bars). Two people should gently push and guide the processor subsystem chassis into the frame.

   Note: Adjust the height of the lift plate, as needed.

8. After the processor subsystem chassis is installed in the frame, lower the lift plate and remove it from the lift tool. Repackage the lift tool.

9. Reinstall all components removed during the removal process by reversing steps 22 on page 814 through 2 on page 813 of the removal procedure.

Memory Books and Memory Blanks

Removal
1. Turn off the system, and completely remove power as described in "Powering Off and Powering On the System" on page 747.

2. Remove the safety bar from the memory slot.

3. Grasp the blue release latches located at the top and bottom of the memory book between your thumb and index finger, and press the tabs together. Pivot the tabs and pull the book straight back.

Inspection
You must examine the connector for any connector damage on the removed book using the 3X Magnification Glass (part number 11P4747) included in the system toolkit. If you identify a defect on the book, do not install the replacement card without contacting your next level support for instructions.

A damaged connector on a defective book may indicate a damaged system backplane. If the memory book connector is damaged, the adjacent memory book may need to be removed in order to inspect the system backplane for damage.

If the removed book is not damaged, carefully remove the new book from the packaging. Be sure to protect the connector and the blue handles when you remove the book from the cardboard box or ESD bag. Do not handle the book by its connector or either of its blue handles. Remove the protective cover from the connector and install it on the defective book.

Notes:
1. Do not stack books on top of each other. ESD bags do not provide sufficient stacking protection.

2. Do not rest a book on its connector or on its blue handles at any time.

After the memory book is removed from the ESD bag, examine the book VHDM connector using the 3X Magnification Glass (part number 11P4747) included in the system toolkit. If any connector shows signs of damage, do not use it.

Replacement

Note: If there is no book installed in the position next to the one that you are replacing, install a filler (part number 21P8218) in that adjacent location.

To replace a book, do the following:

1. Inspect the new book for damage. For more information, see "Inspection" on page 815.
2. Unlatch the two blue handles on the replacement book.
3. Taking care not to hit the connector against the CEC cage, use both hands to carefully place the book on the CEC guides.
4. Slide the book in until it reaches the alignment pins.
5. Using even pressure, actuate both blue handles simultaneously until the book is fully seated.
6. Repeat this process for all replacement books.
7. Reinstall any safety bars that were removed to perform this procedure.
8. If any cables were removed during the removal procedure, plug all cables into their correct locations.
9. Turn on the power as described in "Powering the System On" on page 748.

Fan Controller

Removal

Attention: The fan controller weighs approximately 0.45 Kg (1 lb.)

1. Locate the fan controller to be replaced.
2. Note the state of the fan controller's LEDs.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if *all* the fan controller's LEDs go off or the repair has been scheduled (System outage - EPO off).
5. Label and remove the plugs from the fan controller.
6. Loosen the two knurled captive screws that attach the fan controller to the fan assembly.
7. Grasp the loosened screws, and pivot and pull the fan controller away from the fan assembly.

Replacement

1. Align the metal tabs opposite the captive screws into the corresponding slots in the fan assembly.
2. Pivot gently to seat the autodocking connector.
3. Tighten the knurled captive screws to the fan assembly.
4. Plug all cables into their correct location in the DCA.
5. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure.

Processor Fan Assemblies

Removal
Attention: The fan controller weighs approximately 5 Kg (11 lb.)

1. Locate the fan assembly to be replaced.
2. Note the state of the fan controller's LEDs.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if *all* the fan controller's LEDs go off or the repair has been scheduled (System outage - EPO off),
5. Verify that all cables are labeled for plug location, and unplug the cables from the fan controller on the fan assembly.
6. Remove the fan controller (see "Fan Controller" on page 817).
7. Loosen the two knurled captive screws that attach the fan assembly to the enclosure.
8. Pull the fan assembly away from the enclosure opening.

Replacement
1. Position the fan assembly in front of the opening through the spring-loaded doors in the enclosure.
2. Slide the fan assembly into the enclosure opening and tighten the upper and lower fasteners.
3. Replace the fan controller onto the face of the fan assembly.
4. Plug all cables into their correct location in the DCA.
5. Press the white **Service Complete** button on the UEPO switch to indicate completion of this procedure.

Fan Chassis

Removal
1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. Remove the top two fans. See "Processor Fan Assemblies".
3. Loosen the four retaining screws that attach the fan chassis to the processor subsystem chassis.
4. Pull the fan chassis out of the processor subsystem chassis.

Replacement
Replace in reverse order.

Processor Subsystem Air Filters

Attention: To maintain proper airflow, the air filters (part number 11P3781) must be inspected every six months and replaced as necessary. To replace the air filters, it is not necessary to remove power from the system or blower assemblies .

Removal
To remove, grasp finger tabs on the air filter and pull straight out.

Replacement
To remove, slide the air filter into the slot. The filter is keyed to ensure correct orientation.

I/O Subsystem

I/O Subsystem PCI Slot LED Definitions
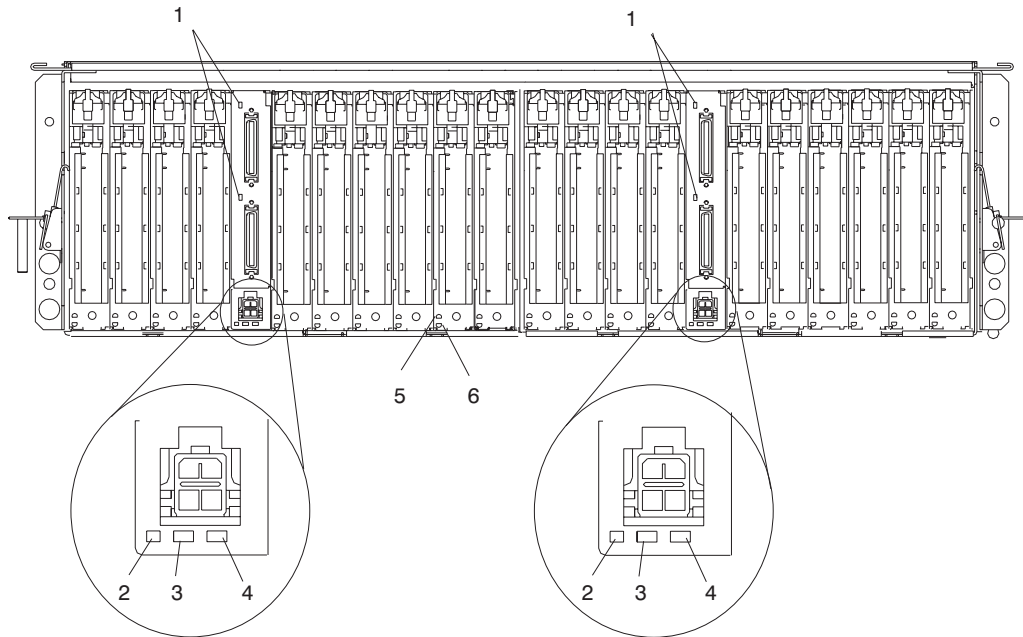
1	I/O LED (Currently Unused)	4	I/O Subsystem Backplane Power On (Green)
2	Auxiliary Power Good (Green)	5	I/O Card Power On LED (Green)
3	I/O Subsystem Backplane Fault (Amber)	6	Failing I/O Card LED (Amber)

The following table describes the possible states of the LEDs associated with the I/O subsystem PCI slots. These LEDs are located at the rear of the I/O subsystem. One LED is associated with each PCI slot.

Green PCI Slot LED Indication	Amber PCI Slot LED	PCI Slot Power/Status	Definition
On	Off	On/No action	The PCI slot power is on and the slot is operational. Do not remove or replace adapters.
On	Flashing	On/Identify	The PCI slot power is on, and the slot has been identified by the software or firmware. Do not remove or replace adapters at this time.
Off	Flashing	Off/Identify Off/Action	The PCI slot power is off, and the slot has been identified by the software or firmware. Perform PCI adapter remove, replace, or install only when directed by the PCI hot-plug procedures.
Off	Off	Off/No power	The PCI slot power is off. If the system power is off, perform non-hot-plug PCI adapter remove, replace, or install procedure.

PCI Adapters

Note: Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shut down and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

Most PCI adapters can be removed and replaced, or installed in the system without turning off the power to the whole system. These adapters are referred to as *hot-pluggable PCI adapters*. Some adapters are not hot-pluggable and power must be removed from the system for adapter removal, replacement, or installation.

Before you remove or replace an adapter, determine if the PCI adapter you are working with is hot-pluggable. See the *PCI Adapter Placement Reference*, order number SA23-2504.

If you are removing a PCI adapter that is:
- Not hot-pluggable, go to "Non-Hot-Pluggable PCI Adapter" on page 825.
- Hot-pluggable, go to "Hot-Pluggable PCI Adapter" on page 828.

Removing and Replacing a PCI Adapter Cassette

Perform these procedures only when you are directed to by the "Non-Hot-Pluggable PCI Adapter" on page 825 or "Hot-Pluggable PCI Adapter" on page 828.

Removing a PCI Adapter Cassette

Attention: Perform this procedure only when you are instructed to by the removal and replacement procedures for a "Non-Hot-Pluggable PCI Adapter" on page 825 or "Hot-Pluggable PCI Adapter" on page 828.

Note: An adapter or a blank filler must be installed into the PCI adapter cassette assembly before it is reinstalled in a processor subsystem or an I/O subsystem.

The following illustration shows the PCI adapter cassette with the handle lowered.
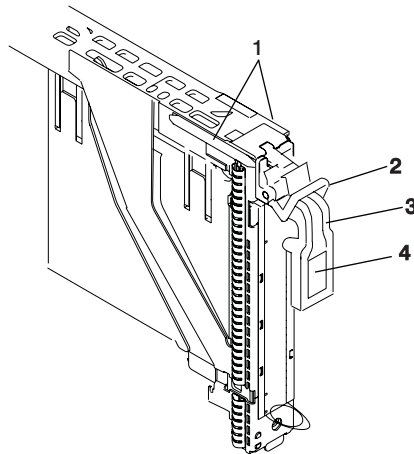
| **1** Dove-tail | **3** Handle in the lowered position |
| **2** Gray locking crossbar | **4** Center of handle |

1. Determine the slot from which you are removing the PCI adapter cassette.
2. Disconnect any cables that are connected to the adapter cassette being removed.
3. Press the center of the handle of the PCI card cassette to release the latch, then lower the handle completely.
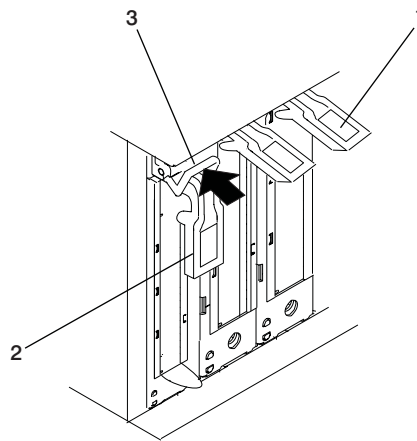
| **1** Center of handle | **3** | Gray locking crossbar |
| **2** Handle in the lowered position | | |

4. When the handle is completely lowered, push the gray locking cross bar. This action prevents the handle from pulling up while the adapter is being removed from the unit.
5. Carefully pull the PCI card cassette straight out from the subsystem as shown in the following illustration. Take care not to pull EMC gaskets from neighboring cassettes.

   Attention: Do not remove more than one adapter cassette at at time.

Replacing a PCI Adapter Cassette

Attention: Perform this procedure only when instructed to by "Non-Hot-Pluggable PCI Adapter" on page 825 or "Hot-Pluggable PCI Adapter" on page 828. Check the following:

- An adapter or blank filler must be installed in each PCI adapter cassette and the top cover for the unit must be installed before installing PCI adapter cassette in the system.
- Check the adapter in the cassette that you are about to install and make sure that the adapter is held firmly by the retaining arms and rachet clips on all four corners.
- Review the procedures beginning with "Blind-Swap Cassette (BSC) Assembly Procedure" on page 883 to make sure that the adapter is correctly installed in the cassette.

Replace the PCI adapter cassette in the unit using the following procedure:

1. Press the center of the handle of the PCI card cassette to release the latch, then lower the handle completely.
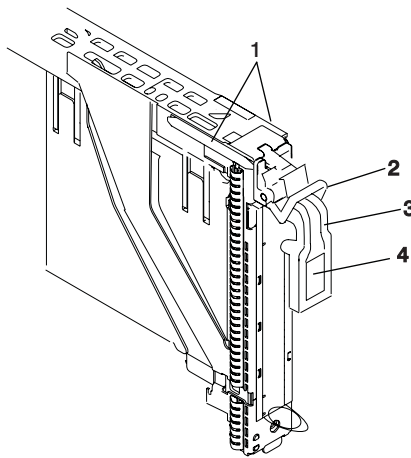
1	Dove-tail	**3**	Handle in the lowered position
2	Gray locking crossbar	**4**	Center of handle

2. Study the PCI adapter slot opening carefully and note the location the dove-tail channels and the cassette guide slot. Use a flashlight to better see the dove-tail channels and the cassette guide slot
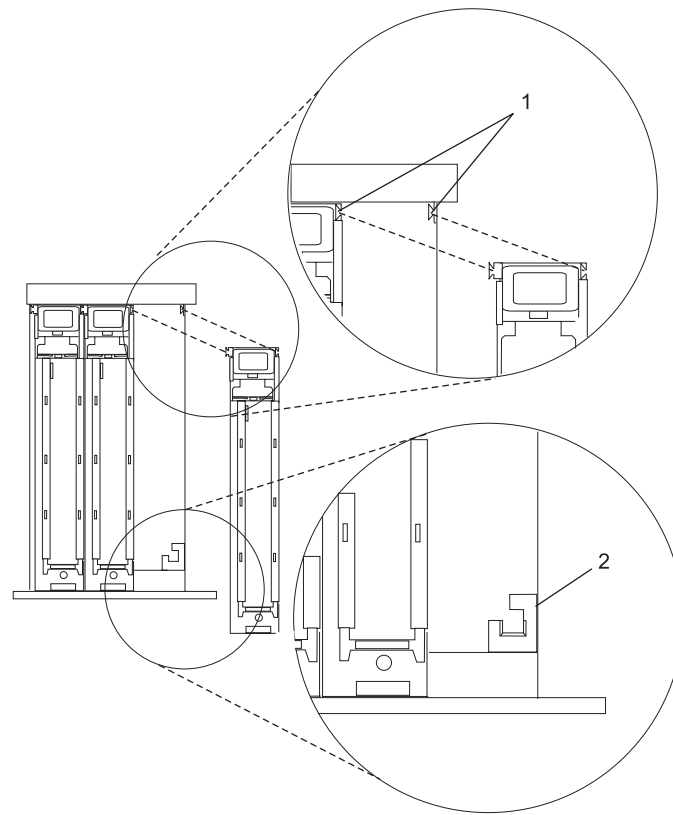
| **1** | Dove-tail channels | **2** | PCI cassette guide slot |

3. Hold the assembly straight on and level with the slot.
4. Align the bottom edge of the PCI cassette cover with the PCI cassette guide rail on the of the system or I/O unit.

   Note: If there is a cassette to the left of the one you are installing, align the ridge on the cover with the ″tick″ in the notch of the neighboring cassette.
5. Slide the cassette partially into the guide.

   Attention: If the cassette does not slide in smoothly, the cover might not have engaged PCI cassette guide rail. Carefully pull the adapter back out and start again. Also, the cassette might bind if it hits the top cover as it is inserted.
6. As you slide the cassette into the slot, ensure the dove-tails on the top of the cassette align with the mating components on both the left and right sides.
7. Push the cassette in until its bezel is even with the next cassettes (to the left or right).

   Note: Viewed from the rear, the left and right dove tail channels must be properly engaged. Check the following on the cassette after it is completely inserted into the unit.
   - There should be no freedom of movement of the cassette when pressure is applied to the handle in a back and fourth motion.
   - The PCI cassette bezel should be even with the other cassettes that are already installed.
   - Visually check to ensure that the cassette is parallel with the cassettes to the left or right. If the cassette is not parallel with the neighboring cassettes, the cassette dove-tail channels might not have engaged, pull the cassette out a few inches, reinsert it, and check the

alignment again. You might need to apply light pressure to the left or right neighboring cassettes against the new cassette in order to engage both of the dove-tails correctly.

8. When the cassette is fully inserted, ensure that the gray locking bar is in the unlocked position (pulled out).

   Attention: Do not force the handle into the raised postion. To enable proper insertion of the adapter, press down on the adapter tailstock (metal tab just below the handle hinge) at the rear of the adapter cassette when lifting the handle. Some minor forward or backward movement of the PCI adapter cassette might be necessary.

9. Carfully lift the handle all the way up until you hear and feel a click. The PCI adapter is pushed into the PCI adapter slot when the handle is raised.

Non-Hot-Pluggable PCI Adapter

Note: The following procedures for non-hot-pluggable PCI adapters require the processes running on all partitions to be stopped and the entire machine to be powered off. To ensure power is removed, see "Powering Off and Powering On the System" on page 747.

Removal

To remove a non-hot-pluggable adapter, perform the following steps:

1. Turn off power and remove power from the system as described in "Powering Off and Powering On the System" on page 747.

2. Determine the slot from which you are removing the adapter.

3. Disconnect any cables that are connected to the adapter being removed.

4. Press the center of the handle of the PCI card cassette to release the latch, then lower the handle completely.

5. When the handle is completely lowered, push the gray locking cross bar.

6. Carefully pull the PCI card cassette straight out from the I/O subsystem as shown in the following illustration. Take care not to pull EMC gaskets from neighboring cassettes.
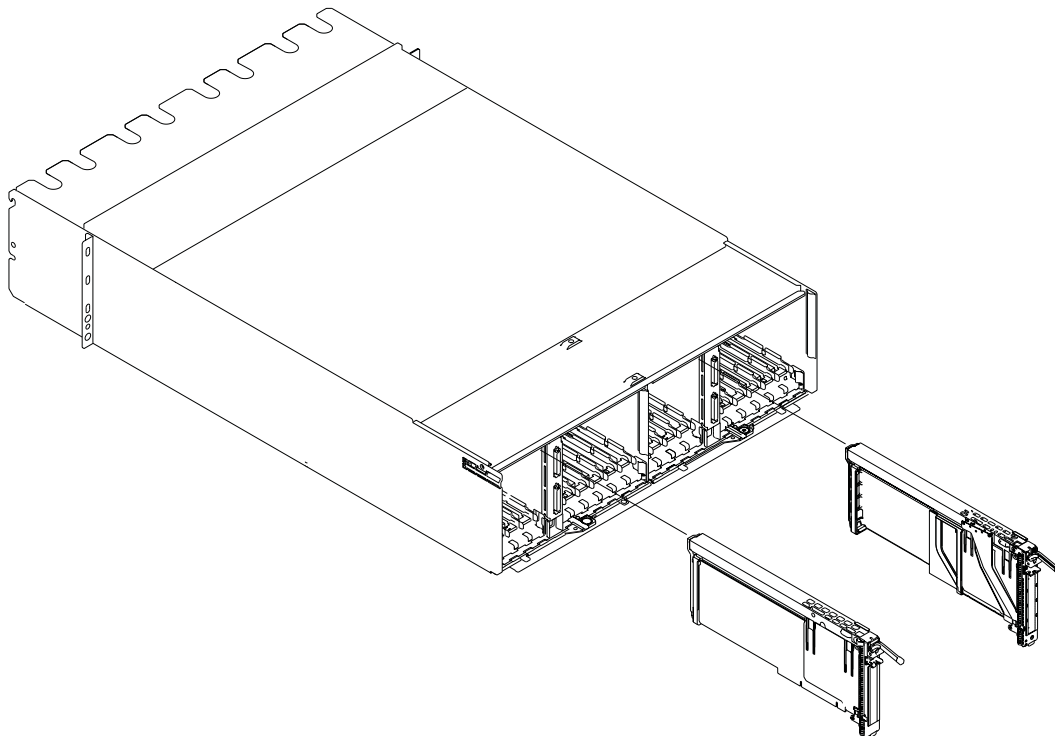
7. If you are installing another adapter in this slot, follow the instructions given in "Replacement".

8. If you are not installing another adapter in this slot, install a blank blind-swap cassette into the slot.

9. Return the system to normal operations.

10. Connect power to the system and turn the power on as described in "Powering the System On" on page 748.

Replacement

Replace the adapter using the following procedure:

Note: If the adapter you are replacing is a double-wide adapter, see "Replacing a Double-Wide Blind-Swap Adapter" on page 827 for steps to install the adapter.

1. Press the center of the handle of the PCI card cassette to release the latch, then lower the handle completely.

2. When the handle is completely lowered, push the gray locking cross bar.

3. Hold the assembly straight on and level with the slot.

4. Align the bottom edge of the PCI cassette cover with the PCI card guide rail on the I/O board.

   Note: If there is a cassette to the left of the one you are installing, align the ridge on the cover with the ″tick″ in the notch of the neighboring cassette.

5. Slide the cassette partially into the guide.

6. Ensure the dovetail on the top track aligns with its mating component(s) on both sides.

7. When the cassette is fully inserted, prepare to activate the handle by lowering the gray locking bar. Lift the handle all the way up until you hear a click. The PCI Card should be completely seated.

8. Set the color slide to blue.

9. Connect power to the system and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. Refer to "Powering the System On" on page 748 if necessary.

10. Ensure that the adapter is configured when the system completes the boot process.

Replacing a Double-Wide Blind-Swap Adapter

Before installing a replacement adapter in a cassette that uses two adapter positions, referred to as a *double-wide cassette*, perform the following checks:

* Check that the screws for the cassette are in place:
  – Across the male dovetail side
  – Holding the extension bracket
  – In the top center holding the cover
  – In the end of the top track
* Check to ensure that the:
  – Rail and the metal bezel are aligned
  – Rail is not caught on the top of the bezel
  – Tailstock is aligned with the bezel
* Check the handle assembly to ensure that the:
  – Pivot block is not broken
  – Handle is set to the blue color
  – Handle gray bar is not broken
* Check that all the EMC brackets are intact and in place.
* Check that the light pipes are intact and free from damage.
* Check the bezel hole to ensure that the:
  – Handle is activated
  – Hole in the tailstock aligns with the hole in the bezel
* Check the cover assembly to ensure that the cover end is held by the rear arm of the bezel assembly.

To replace the adapter, use the following procedure:

1. Press the center of the handle of the PCI card cassette to release the latch, then lower the handle completely.
2. When the handle is completely lowered, push the gray locking cross bar.
3. Hold the assembly straight on with the PCI slots.
4. Place the double-wide blind-swap cassette assembly with the lower leading corner between installed single-wide cassettes.
5. Slide the cassette partially into the guide.
6. Ensure the dovetail on the top track aligns with its mating component(s) on both sides. After the dovetails are engaged, push the cassette fully into the drawer. You will feel some resistance when the cassette is fully inserted. When the cassette is fully inserted, it aligns with the other installed cassettes.
7. If the cassette is fully inserted, press the button on the handle to unlock the gray crossbar.
8. Raise the handle with one hand and at the same time, use your other hand to press down on the metal tab (adapter tailstock tab just below the handle mechanism) until the handle latches. You should hear a click as you lift the handle all the way up.

   Note: To ensure that the PCI adapter is completely seated, you may have to release the handle and repeat this process while pressing on the tailstock tab.
   When you are sure the adapter is completely seated, be sure that the handle is latched.
9. Connect power to the system and go to ″MAP 0410: Repair Checkout″ in the *Diagnostic Information for Multiple Bus Systems*. Refer to "Powering the System On" on page 748 if necessary.
10. Ensure that the adapter is configured when the system completes the boot process.

Hot-Pluggable PCI Adapter

Notes:

1. The following procedures for hot-pluggable PCI adapters may result in unpredictable system behavior, depending on the adapter failure. The PCI hot-plug manager may become inoperable or indicate invalid or inconsistent slot status. In the event any of the hot-plug procedures below do not behave as described, proceed to "MAP 1420: Recovery Procedures for Hot-Pluggable PCI Adapters" on page 135.

2. Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shut down and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

Replacing a Hot-Pluggable PCI Adapter

Note: Use this procedure only when you are replacing one adapter with an identical adapter. If you are replacing an adapter with an adapter that is not identical to the adapter that was removed, go to "Removing a Hot-Pluggable PCI Adapter" on page 833 and "Installing a Hot-Pluggable PCI Adapter" on page 831.

To replace an adapter, perform the following steps:

1. Determine the slot from which you are removing the adapter.
2. Ensure that any processes or applications that might use the adapter are stopped.

   Note: Removing a hot-pluggable PCI adapter requires the system administrator to take the PCI adapter offline before performing any PCI adapter hot-plug procedures. Before taking an adapter offline, the devices attached to the adapter must also be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

   For additional information about taking an adapter offline or removing it from the system configuration, see the *AIX System Management Guide: Operating System and Devices*. This publication is located on the *AIX Documentation* CD. The documentation information is made accessible by loading the documentation CD onto the hard disk or by mounting the CD in the CD-ROM drive.

3. Refer to "PCI Hot-Plug Manager Access" on page 835, and follow the steps in the access procedure to select **PCI Hot Plug Manager**. Then return here to continue.
4. Select **Unconfigure a Device** and press Enter.
5. Press F4 to display the Device Names menu.
6. From the menu, select the adapter you are removing.
7. Answer YES to **Keep Definition**. Press Enter.
8. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfigure is indicated by the `OK` message displayed next to the **Command** field at the top of the screen.
9. Press F3 to return to the PCI Hot-Plug Manager menu.
10. Select **Replace/Remove a PCI Hot-Plug Adapter** and press Enter. The Replace/Remove a PCI Hot-Plug Adapter menu displays.
11. Move the cursor to select the adapter that you are removing and press Enter.
12. Press the Tab key until the entry field displays the replace operation and then Press the Enter key. Follow the instructions that display on the screen until you are instructed to remove the adapter.
13. When you are instructed to remove the adapter from the adapter slot, disconnect any cables that are connected to the adapter being removed.
14. Press the center of the handle of the PCI adapter cassette to release the latch, then lower the handle completely.

15. When the handle is completely lowered, push the gray locking cross bar.

16. Carefully pull the PCI adapter cassette straight out from the I/O subsystem. Take care not to pull EMC gaskets from neighboring cassettes.
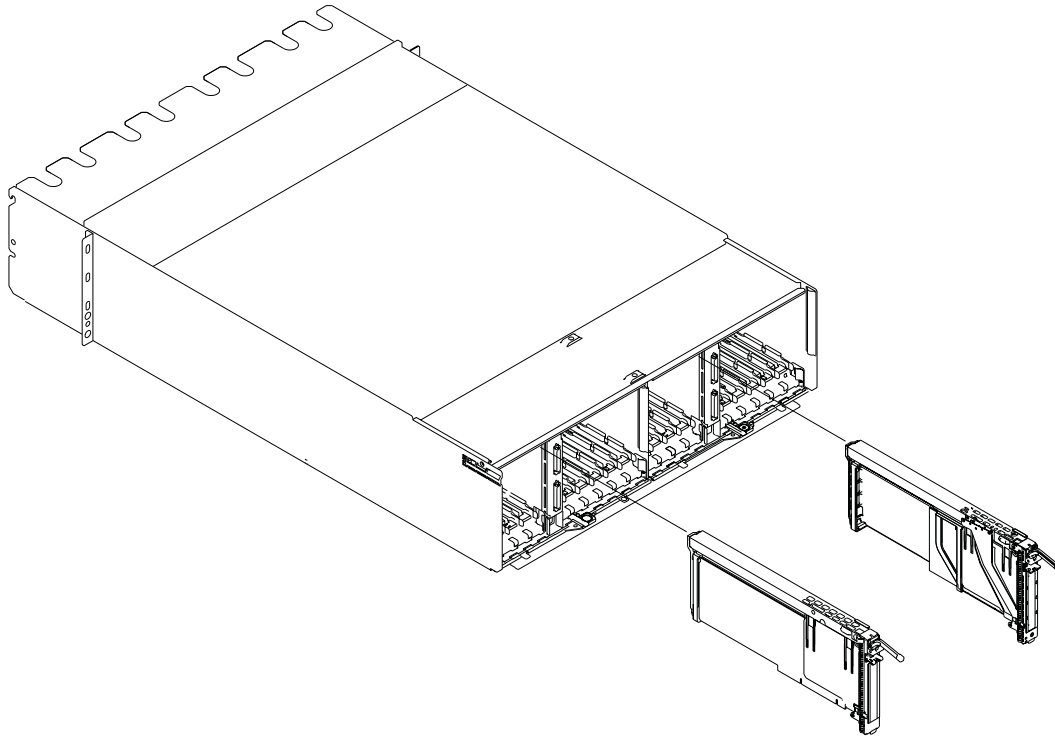
17. Install the replacement adapter in the blind-swap cassette, see "Blind-Swap Cassette (BSC) Assembly Procedure" on page 883.

18. When the adapter is installed in the blind-swap cassette, install the adapter in the adapter slot:

> **Note:** If the adapter you are replacing is a double-wide adapter, see "Replacing a Double-Wide Blind-Swap Adapter" on page 827 for the remaining steps to install the adapter. Then go to step 19 below.

   a. Lower the black handle completely.

   b. Push the gray locking cross bar until you hear a clicking sound.

   c. Hold the assembly straight on with the slot.

   d. Align the bottom edge of the PCI cassette cover with the PCI card guide rail on the I/O backplane.

   > **Note:** If there is a cassette to the left of the one you are installing, align the ridge on the cover with the ″tick″ in the notch of the neighboring cassette.

   e. Slide the cassette partially into the guide.

   f. Ensure the dovetail on the top track aligns with its mating component(s) on both sides, then continue the installation.

   g. When the cassette is fully inserted, lower the gray locking bar. Lift the handle all the way up until you hear a click. The PCI Card should be completely seated.

   h. Set the color slide to blue.

19. Connect appropriate cables and devices to the adapter.

20. Continue to follow the screen instructions until you receive a message that the replacement is successful. Successful replacement is indicated by the `OK` message displayed next to the **Command** field at the top of the screen.

21. Press the F3 key to return to the PCI Hot-Plug Manager menu.
22. Select **Install/Configure Devices Added After IPL** and press Enter. Then follow the instructions on the screen. Successful replacement is indicated by the OK message displayed next to the **Command** field at the top of the screen.
23. Press F10 to exit the Hot-Plug Manager.
24. Install any covers that you removed earlier, and return the system to the normal operations.

Installing a Hot-Pluggable PCI Adapter

Notes:

1. Before installing a new adapter, ensure the device driver for the adapter is installed. Check with the system administrator if the device driver is not already installed.

2. Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shut down and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

To install an adapter, perform the following steps:

1. Install the new adapter into a blind-swap cassette, see "Blind-Swap Cassette (BSC) Assembly Procedure" on page 883.

2. Refer to "PCI Hot-Plug Manager Access" on page 835 and follow the steps in the access procedure to select **PCI Hot Plug Manager**. Then return here to continue.

3. From the PCI Hot-Plug Manager menu, select **Add a PCI Hot-Plug Adapter** and press Enter. The Add a Hot-Plug Adapter window displays.

4. See the *PCI Adapter Placement Reference*, order number SA23-2504, for adapter placement information. Select an empty PCI slot for the adapter.

5. Select the appropriate empty PCI slot from the ones listed on the screen, and press Enter.

6. Follow the instructions on the screen to install the adapter until the visual indicator (LED) for the specified PCI slot is set to the Action state. See "I/O Subsystem PCI Slot LED Definitions" on page 820.

7. Install the new adapter in the adapter slot by performing the following:

   Note: If the adapter you are replacing is a double-wide adapter, see "Replacing a Double-Wide Blind-Swap Adapter" on page 827 for the remaining steps to install the adapter. Then go to step 8 below.

   a. Lower the black handle completely.

   b. Push the gray locking cross bar until you hear a clicking sound.

   c. Hold the assembly straight on and level with the slot.

   d. Align the bottom edge of the PCI cassette cover with the PCI card guide rail on the I/O backplane.

      Note: If there is a cassette to the left of the one you are installing, align the ridge on the cover with the ″tick″ in the notch of the neighboring cassette.

   e. Slide the cassette partially into the guide.

   f. Ensure that the dovetail on the top track aligns with its mating component(s) on both sides, then continue the installation.

   g. When the cassette is fully inserted, lower the gray locking bar. Lift the handle all the way up until you hear a click. The PCI Card should be completely seated.

   h. Set the color slide to blue.

8. Connect appropriate cables and devices to the adapter.

9. Continue to follow the screen instructions until you receive a message that the installation is successful. Successful installation is indicated by the OK message displayed next to the **Command** field at the top of the screen.

10. Press the F3 key to return to the PCI Hot-Plug Manager menu.

11. Select **Install/Configure Devices Added After IPL** and press Enter. Then follow the instructions on the screen. Successful installation is indicated by the OK message displayed next to the **Command** field at the top of the screen.

12. If you do not have other adapters to install, continue with the next step.
    OR
    If you have other adapters to install, press the F3 key to return to the PCI Hot-Plug Manager menu
    and then return to step 3 on page 831.

13. Press F10 to exit the Hot-Plug Manager.

14. Install any covers that you removed earlier, and return the drawer to normal operations.

Removing a Hot-Pluggable PCI Adapter

Notes:

1. If you are removing an adapter and replacing it with an adapter that is identical to the adapter that was removed, use the "Replacing a Hot-Pluggable PCI Adapter" on page 828 procedure.

2. Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shut down and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

To remove an adapter, perform the following steps:

1. Open the door of the rack.
2. Determine the slot from which you are removing the adapter.
3. Ensure that any processes or applications that might use the adapter are stopped.

   Note: Removing a hot-pluggable PCI adapter requires the system administrator to take the PCI adapter offline before performing any PCI adapter hot-plug procedures. Before taking an adapter offline, the devices attached to the adapter must also be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

   For additional information about taking an adapter offline or removing it from the system configuration, see the *AIX System Management Guide: Operating System and Devices*. This publication is located on the *AIX Documentation* CD. The documentation information is made accessible by loading the documentation CD onto the hard disk or by mounting the CD in the CD-ROM drive.

4. Refer to "PCI Hot-Plug Manager Access" on page 835, and follow the steps in the access procedure to select **PCI Hot Plug Manager**. Then return here to continue.
5. Select **Unconfigure a Device** and press Enter.
6. Press F4 to display the Device Names menu.
7. Select the adapter you are removing from the menu.
8. Use the Tab key to answer NO to **Keep Definition**. Press Enter.
9. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfigure is indicated by the `OK` message displayed next to the **Command** field at the top of the screen.
10. Press F3 to return to the PCI Hot-Plug Manager menu.
11. Select **Replace/Remove a PCI Hot-Plug Adapter** and press Enter. The Replace/Remove a PCI Hot-Plug Adapter menu displays.
12. Move the cursor to select the adapter that you are removing and press Enter. (The description entry displays as `unknown`).
13. Press the Tab key until the entry field displays the remove operation and then press Enter. Follow the instructions that display on the screen until you are instructed to remove the adapter.
14. When you are instructed to remove the adapter from the adapter slot, disconnect any cables that are connected to the adapter being removed.
15. Press the center of the handle of the PCI card cassette to release the latch, then lower the handle completely.
16. When the handle is completely lowered, push the gray locking cross bar.

17. Carefully pull the PCI adapter cassette straight out from the I/O subsystem, as shown in the following illustration. Take care not to pull EMC gaskets from neighboring cassettes.
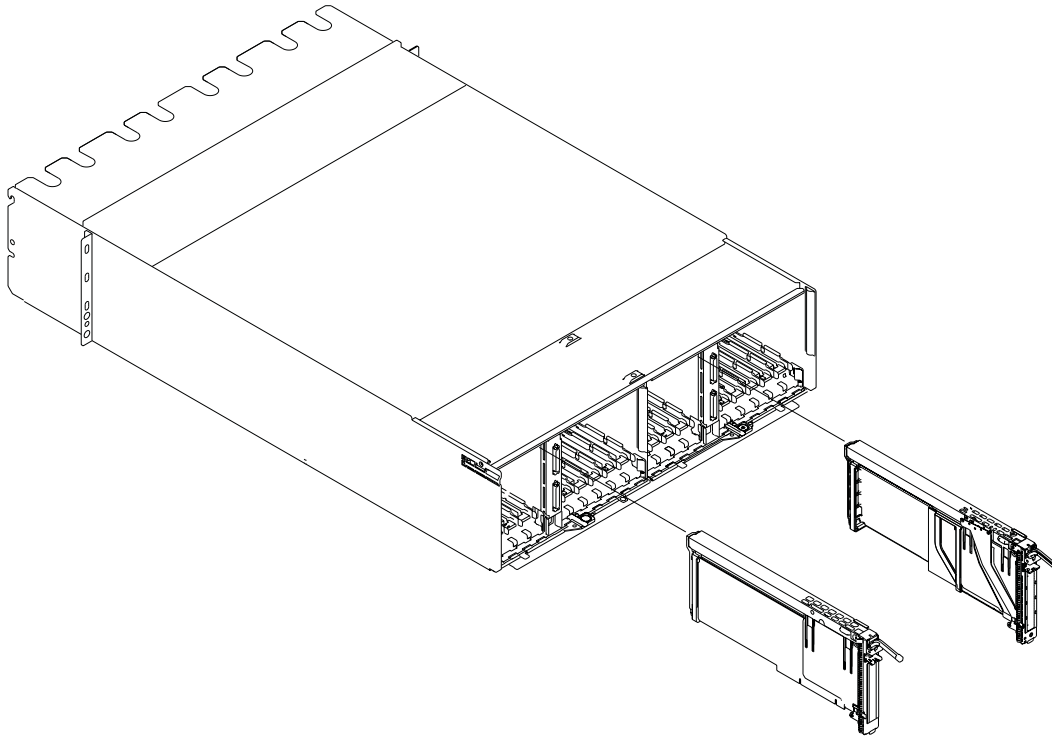
18. If you are not installing another adapter in this slot, install a blank blind-swap cassette into the slot.
19. Continue to follow the screen instructions until you receive a message that the adapter removal is successful. Successful removal is indicated by the OK message displayed next to the **Command** field at the top of the screen.
20. If you do not have other adapters to remove, continue with the next step.
    OR
    If you have other adapters to remove, press the F3 key to return to the PCI Hot-Plug Manager menu and then return to step 11 on page 833.
21. Press F10 to exit the Hot-Plug Manager.
22. Install any covers that you removed earlier, and return the drawer to the normal operations.

PCI Hot-Plug Manager Access

Note: Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shut down and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

The installation instructions for hot-pluggable PCI adapters refer you to these procedures when it is appropriate to perform them.

Note: A PCI adapter is only hot-pluggable if the PCI adapter is supported for hot-plug applications. See the *PCI Adapter Placement Reference*, order number SA23-2504.

Accessing Hot-Plug Management Functions

Note: Removing or installing a Hot-Pluggable PCI adapter requires the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must also be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

For additional information about taking an adapter offline or removing it from the system configuration, see the *AIX Version 4.3 System Management Guide: Operating System and Devices*. This publication is located on the *AIX Documentation* CD. The documentation information is made accessible by loading the documentation CD onto the hard disk or by mounting the CD in the CD-ROM drive.

To access the hot-plug menus, do the following:

1. Log in as root user, if the system is a partitioned system, log in as root user on the partition that has the adapter assigned to it.
2. At the command line, type **smitty**.
3. Select **Devices**.
4. Select **PCI Hot Plug Manager** and press Enter.
5. The PCI Hot-Plug Manager menu displays. Return to the procedure that directed you here. The following describes the menu options.

PCI Hot-Plug Manager Menu
The following options are available from the PCI Hot Plug Manager menu:

Note: For information about the PCI slot LED states, see "I/O Subsystem PCI Slot LED Definitions" on page 820.

List PCI Hot-Plug Slots

Provides a descriptive list of all slots that support PCI hot-plug capability. If the listing for a slot indicates it holds an "Unknown" device, select the **Install/Configure Devices Added after IPL** to configure the adapter in that slot.

Add a PCI Hot-Plug Adapter

Allows the user to add a new PCI hot-plug-capable adapter to the slot with the system turned on. You will be asked to identify the PCI slot that you have selected prior to the actual operation. The selected PCI slot will go into the Action state and finally into the On state.

Note: The system will indicate the slot holds an "Unknown" device until you perform the **Install/Configure Devices Added After IPL** option to configure the adapter.

Replace/Remove a PCI Hot-Plug Adapter

Allows the user to remove an existing adapter, or replace an existing adapter with an identical one. For this option to work, the adapter must be in the Defined state (see "Unconfigure a Device" option below).

You will be asked to identify the PCI slot prior to the actual operation. The selected PCI slot will go into the Action state.

Identify a PCI Hot-Plug Slot

Allows the user to identify a PCI slot. The selected PCI slot will go into the Identify state. See "I/O Subsystem PCI Slot LED Definitions" on page 820.

Unconfigure a Device

Allows the user to put an existing PCI adapter into the Defined state if the device is no longer in use.

This step must be completed successfully before starting any removal or replacement operation. If this step fails, the customer must take action to release the device.

Configure a Defined Device

Allows a new PCI adapter to be configured into the system if software support is already available for the adapter. The selected PCI slot will go into the On state.

Install/Configure Devices Added After IPL

The system attempts to configure any new devices and tries to find and install any required software from a user-selected source.

The add, remove, and replace functions return information to the user indicating whether the operation was successful. If additional instructions are provided on the screen, complete the recommended actions. If the instructions do not resolve the problem, see the following:

- If the adapter is listed as Unknown, perform the **Install/Configure Devices Added After IPL** option to configure the adapter.
- If you receive a warning indicating that needed device packages are not installed, the system administrator must install the specified packages before you can configure or diagnose the adapter.
- If you receive a failure message indicating a hardware error, the problem might be either the adapter or the PCI slot. Isolate the problem by retrying the operation in a different PCI slot, or trying a different adapter in the slot. If you determine that you have failing hardware, call your service representative.

PCI Adapter or Blank Filler Removal from a Cassette Assembly

Use this procedure when you are preparing to install or replace an adapter or an adapter blank filler in the system unit or an I/O drawer.

Note: An adapter or an adapter blank filler must be installed into the PCI adapter cassette assembly before it is reinstalled in a system unit or an I/O drawer.

Determine the slot of the system or I/O drawer in which you plan to install or remove an adapter, and refer to the procedures for removing an adapter from the system. Remove the PCI adapter cassette assembly from the system unit or I/O drawer before beginning this procedure.

Note: It may take approximately 30 to 40 minutes to perform this procedure the first time. This time includes using the instructions in this guide and performing the steps. Thereafter, performing this procedure usually takes approximately 10 minutes.

Before performing the following steps, familiarize yourself with the entire procedure.

To remove a PCI adapter or blank filler from a cassette assembly, do the following:

1. Place the PCI adapter cassette assembly on a flat work surface with the cover facing up, and the top of the adapter facing you. See the following illustration.
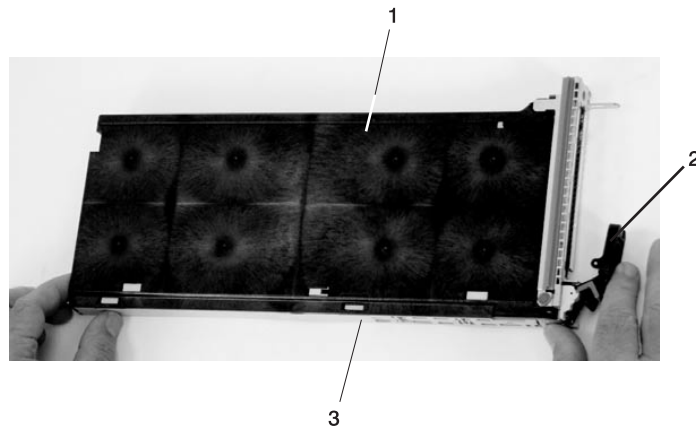
1 Cover   **3** Top of Cover
2 Handle

2. Using two fingers, remove the bushing-lock pin from the bushing. The pin can be removed by pulling it out of the bushing with your fingernails.
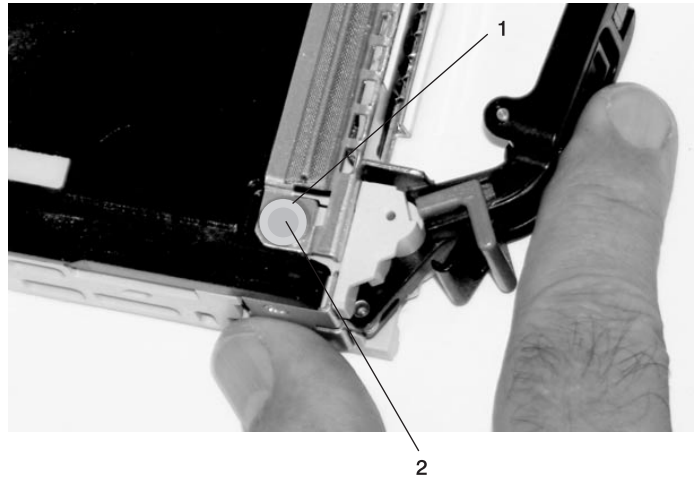
1 Bushing
2 Bushing-Lock Pin
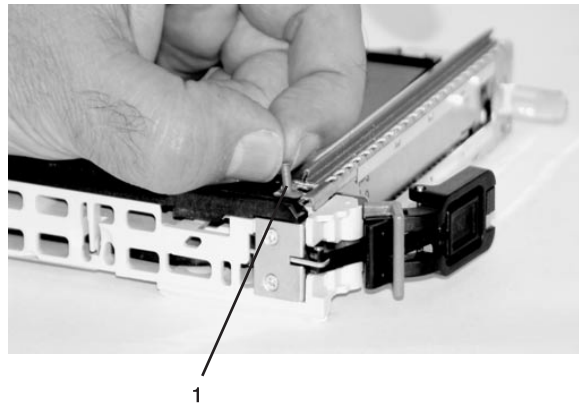
1 Bushing-Lock Pin

3. Remove the bushing. The bushing can be removed by pulling it out of the PCI adapter cassette assembly with your fingernails.
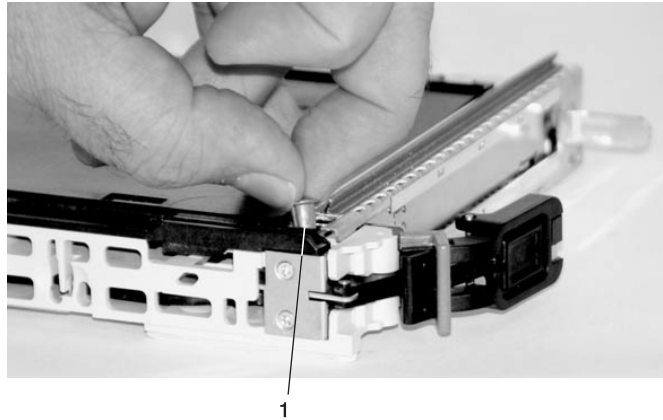
1 Bushing

4. Turn over the PCI adapter cassette assembly so that the top is facing away from you.
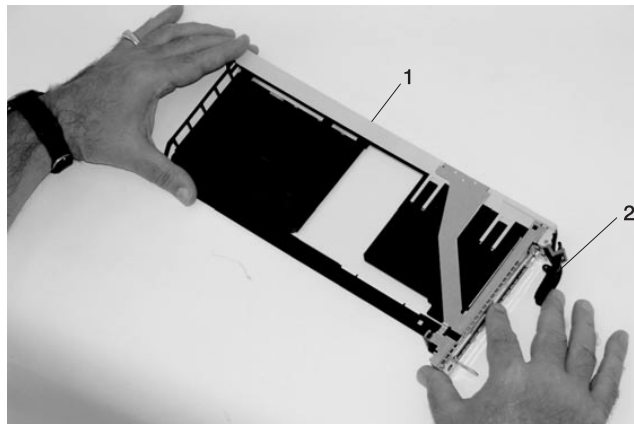
1 Top of Adapter
2 Handle

5. Remove the bezel, as follows:

    a. Locate the plastic latch fingers in the top part of the cassette.
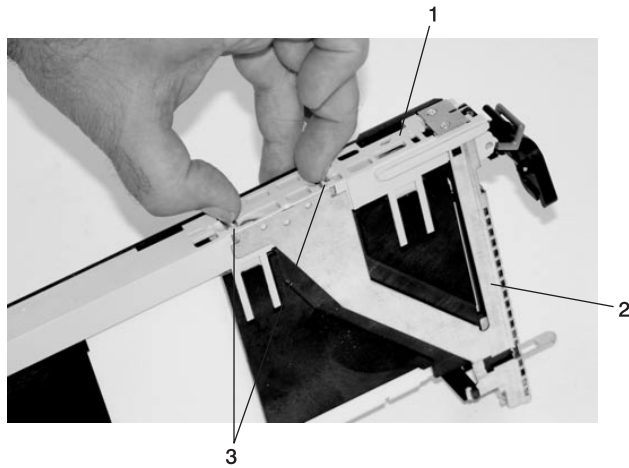
    1 Top of Cassette
    2 Bezel
    3 Plastic Latch Fingers

    b. Using one hand, pinch the plastic latch fingers, and with your other hand, carefully lift the top part of the bezel extension out until the tabs clear the slots in the PCI adapter cassette assembly.
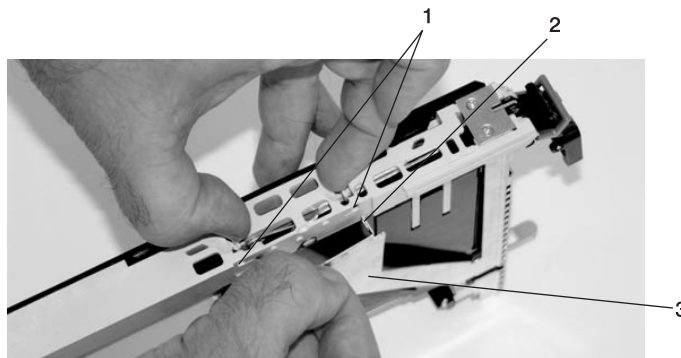
    1 Slots
    2 Tab
    3 Bezel Extension

c. While holding the bezel extension out, push the plastic cover latch out of the bezel hook, as shown in the following illustration. This action allows the bezel to be removed.
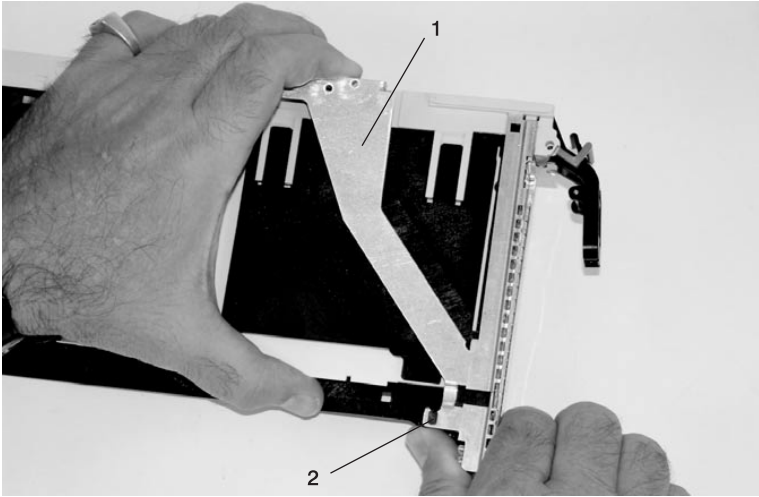
1 Bezel Extension
2 Plastic Cover Latch in Bezel Hook

d. On the opposite side of the cassette (cover side), push the cover latch to release the bezel.
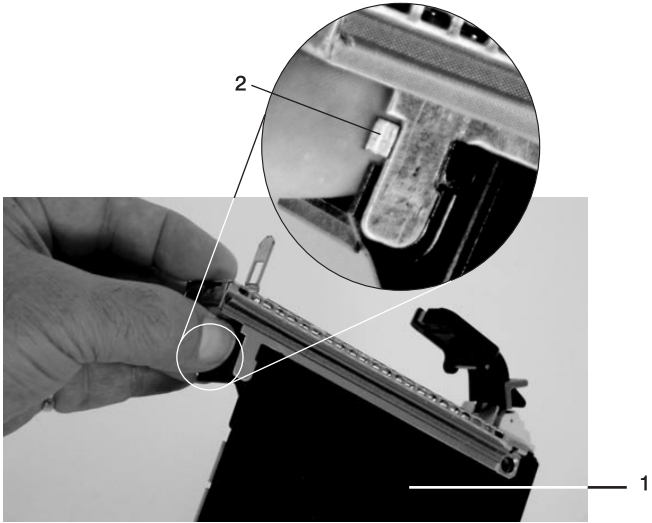
1 Cover Side
2 Cover Latch

e. While holding the bezel extension out, carefully slide the bezel off. You might have to work from both sides to loosen the bezel assembly from the cassette assembly. When the bezel is free, slide it completely off the cassette assembly, and set it aside.
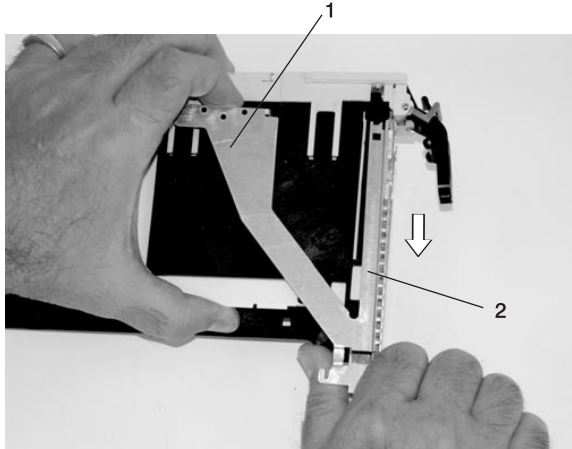
1 Bezel Extension
2 Bezel
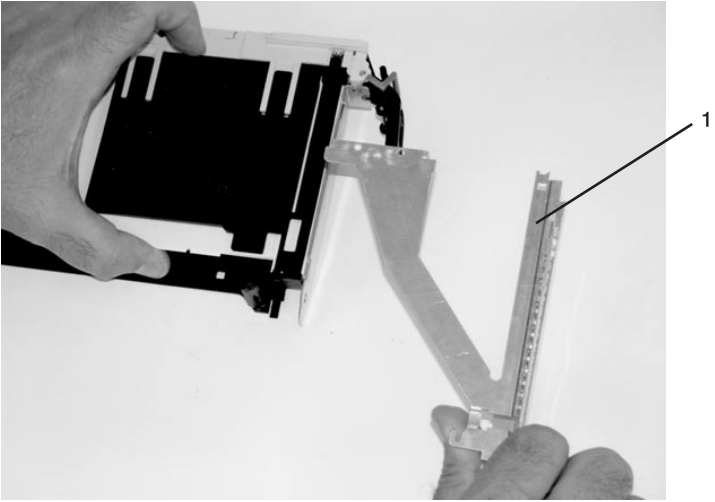
1 Bezel

6. Turn over the cassette so that the cover is facing up, as shown in the following illustration. Remove the cover from the cassette as follows:

   a. Slide the cover until it releases from the cassette assembly.

      Attention: The cover might be tight and difficult to slide. If you grasp the left end (handle end) of the cassette and the right end of the cover, you can use enough force to pull the cover off the PCI adapter cassette assembly.
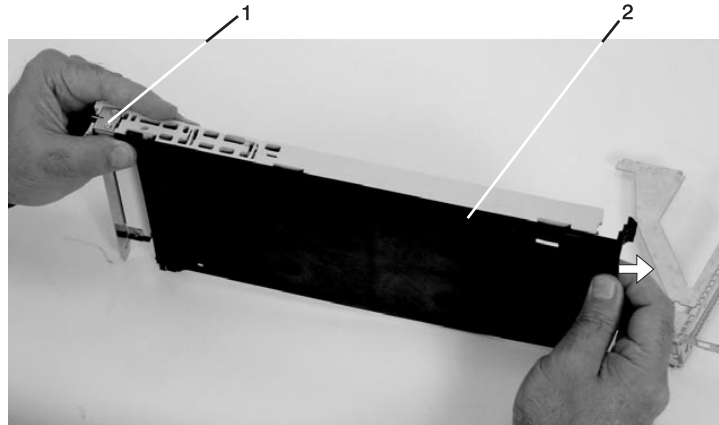
1 Left End of the Cassette
2 Cassette Cover

   b. Lift the cover off the assembly, and set it aside.

   c. By pulling on both sides of the gray plastic locking bar, which is located on the handle, ensure that the handle is pulled into the unlocked position. Raise the handle on the cassette linkage assembly until it locks into the up position (the blank filler or adapter moves downward).
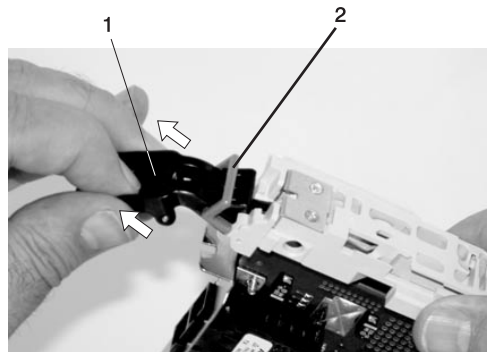
1 Handle
2 Gray Plastic Locking Bar

7. Remove the metal EMC shield from the top of the tailstock.

1 Metal EMC Shield

8. Remove the blank filler or adapter that is installed in the cassette linkage assembly.

   Note: If there is a blank filler in the cassette linkage assembly, as shipped from the manufacturer, there are two adapter arms. One adapter arm is used with short adapters (short adapter arm) and the other adapter arm is used with long adapters (long adapter arm).

   If you are removing a short adapter or blank filler, see "Short Adapter or Blank Filler Removal" on page 846.

   If you are removing a long adapter, see "Long Adapter Removal" on page 848.

Short Adapter or Blank Filler Removal

To remove a short adapter or blank filler, do the following:

1. Slide the long and short adapter arms away from the adapter or blank filler by doing the following:

   a. Each adapter arm has a release tab that allows the arm to be moved away from the adapter or blank filler in the cassette assembly. Use your fingernail to lift the tab, to allow each arm to be moved away from the adapter or blank filler. Lift the release tab on the short adapter arm, and push on the slotted tab to release the end of the blank filler.

      Note: If you plan to install a short adapter, leave the long adapter arm on the cassette linkage assembly. If you plan to install a long adapter, remove both the long and short adapter arms from the cassette linkage assembly in the next step.

   b. Slide the long and short adapter arms away from the blank filler or adapter.
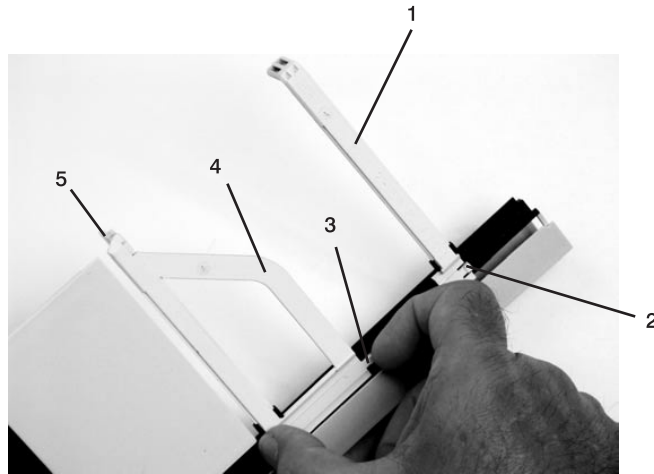
1 Long Adapter Arm	**4** Short Adapter Arm
2 Release Tab	**5** Slotted Tab
3 Release Tab	

2. Remove the adapter or blank filler from the cassette linkage assembly by rotating the bottom of the tailstock out, as shown in the following illustration. Store the adapter or blank filler in a safe place.
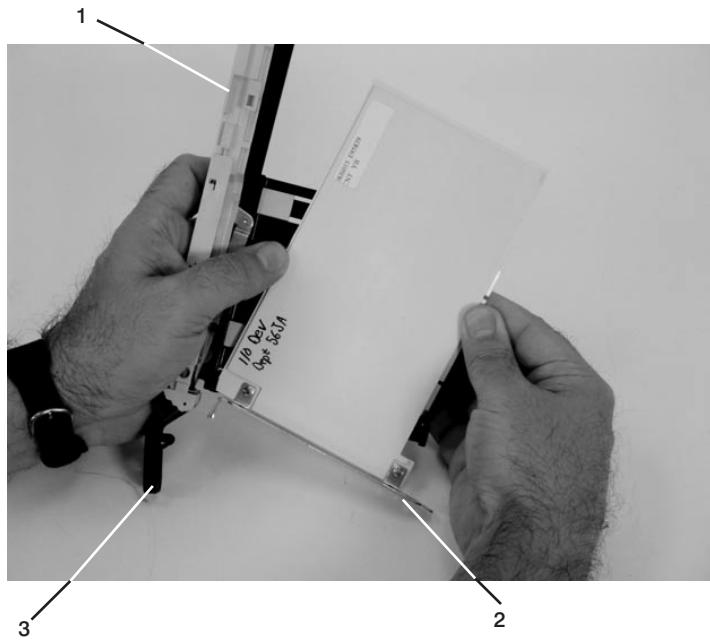
1	Cassette Linkage Assembly	**3**	Handle
2	Bottom of Tailstock		

3. The removal procedure for the PCI adapter cassette assembly is complete. To install a new adapter or blank filler in the cassette, go to "Installing a Hot-Pluggable PCI Adapter" on page 831.

Long Adapter Removal

To remove a long adapter, do the following:

1. Each adapter arm has a release tab that allows the arm to be moved away from the adapter in the cassette assembly. Use your fingernail to lift the tab, to allow the arm to be moved away from the adapter. Lift the release tab on the long adapter arm, and slide it off the cassette linkage assembly.
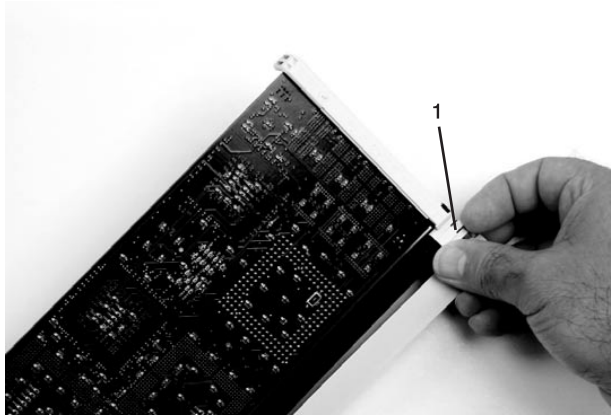
1 Release Tab

2. Remove the adapter from the cassette linkage assembly by rotating the bottom of the tailstock out, as shown in the following illustration. Store the adapter in a safe place.
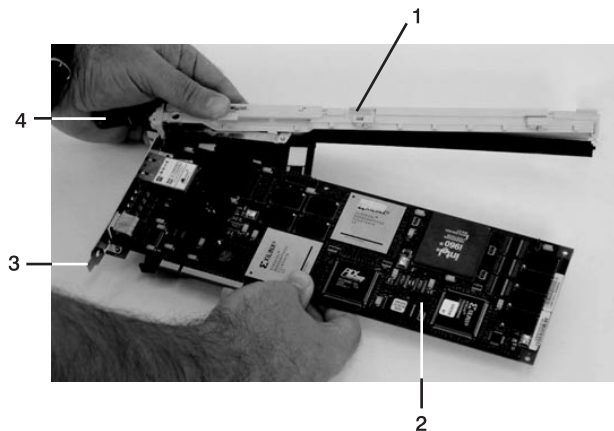
1 Cassette Linkage Assembly	**3** Bottom of Tailstock
2 Adapter	**4** Handle

3. The removal procedure for the PCI adapter cassette assembly is complete. To install a new adapter or blank filler in the cassette, go to "Installing a Hot-Pluggable PCI Adapter" on page 831.

Replacing an Adapter in a PCI Adapter Cassette

This procedure is performed when preparing to install a new adapter or a blank filler in the processor subsystem or an I/O drawer. Familiarize yourself with the entire procedure before performing the following steps.

1. Place the empty PCI Adapter Cassette Assembly linkage on a flat work surface in front of you. Position the cassette so that the handle is in the raised (up position), and on the left, with the top of the linkage facing away from you.

   Note: Your PCI Adapter Cassette Assembly linkage might not have the short or long adapter retaining arms installed if you removed them during the remove procedure. In the following figure, both arms are shown.

   Note: If you are installing an adapter that is in the following list, use the additional brackets listed to help when you seat the adapter during installation. There are unique brackets **(1)** for each adapter type **(2)**:
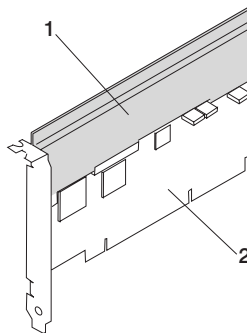
53P5450	Bracket for Gigabit Ethernet PCI-X Adapter, FC 5700 or 10/100/1000 Base-TX Ethernet PCI-X Adapter, FC 5701
44P2661	Bracket for Dual Channel Ultra3 SCSI PCI Adapter, FC 6203 Type 4Y
44P0321	Bracket for 10/100 BaseT Ethernet PCI Adapter, FC 4962 Type AF
44P2675	Bracket for 2 Gigabit Fibre Channel Adapter, FC 6228 Type 4W
44P2676	Bracket for Gigabit Ethernet - SX PCI Adapter, FC 2969 Type 9U, or 10/100/1000 Base-T Ethernet PCI Adapter, FC 2975 Type A-A

2. Use the following procedure to determine if you are installing a long adapter or a short adapter. If you know the length of your adapter, skip the following steps and proceed to step 3 on page 852.

   a. Remove the adapter from its protective packaging and, if present, remove the plastic extension handle from the end of the adapter.

   b. Place the adapter or a blank filler over the cassette with the upper left corner aligned into the top adapter-retaining clip.
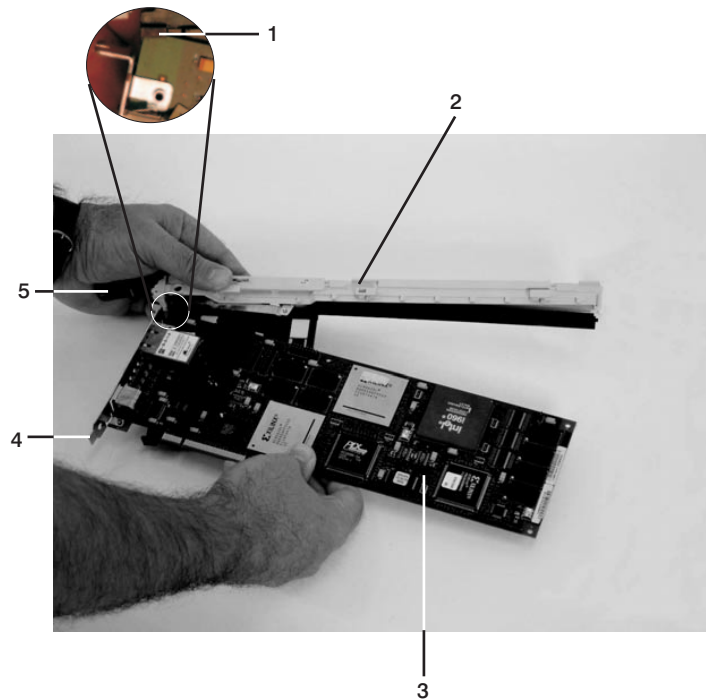
1	Top Adapter-Retaining Clip	3	Adapter
2	Cassette Linkage Assembly	4	Bottom of Tailstock
		5	Handle

c. The cassette linkage is marked to show long or short adapters similar to the adapter shown in the following figure. Check the right end of the adapter to determine if it is long enough to fall into the long area of the cassette linkage. Ensure that the corner on the left end of the adapter is still aligned into the top adapter-retaining clip and determine the length of the adapter.
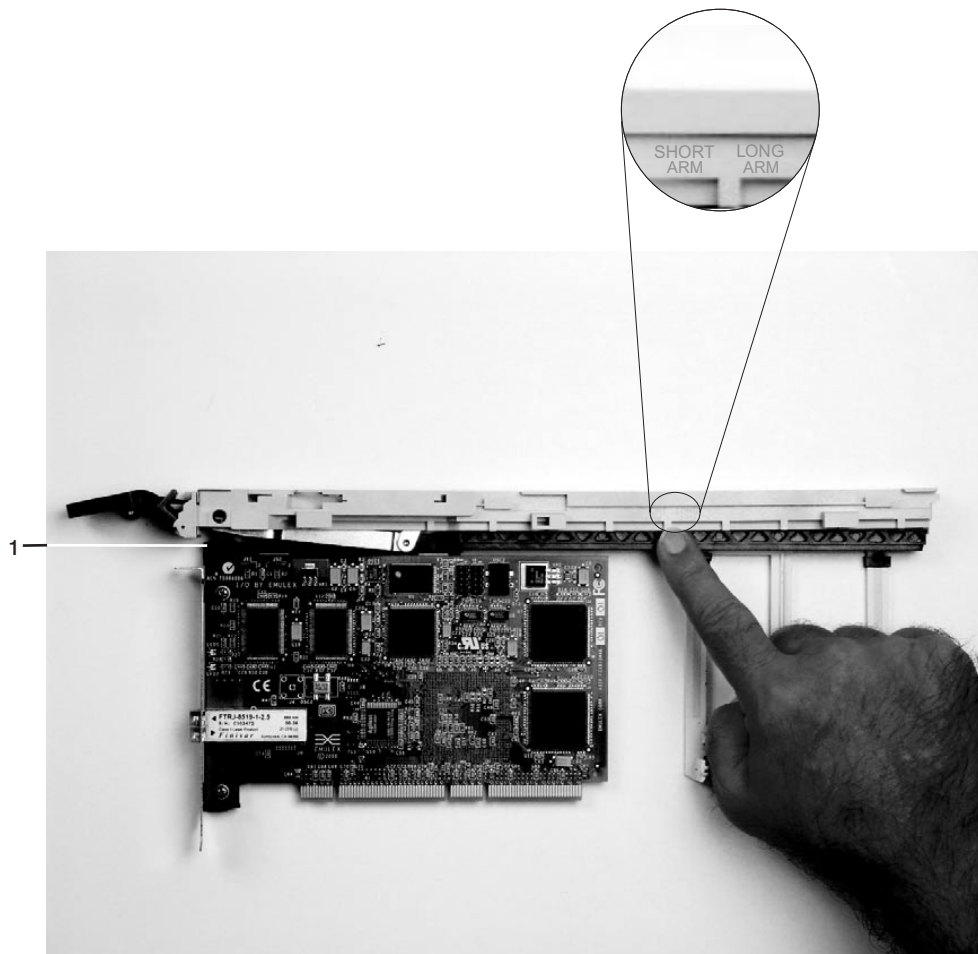
1 Top Adapter-Retaining Clip

3. Remove the adapter or blank filler and ensure that the handle is in the up position. If you need to move the handle, ensure that the gray locking bar is pulled into the unlocked position, and then rotate the adapter handle until the handle is in the up position (the cassette linkage will extend down beyond the cassette top).

If you are installing a short adapter or blank filler, proceed to "Short Adapter or Blank Filler Installation" on page 853. If you are installing a long adapter, proceed to "Long Adapter Installation" on page 868.
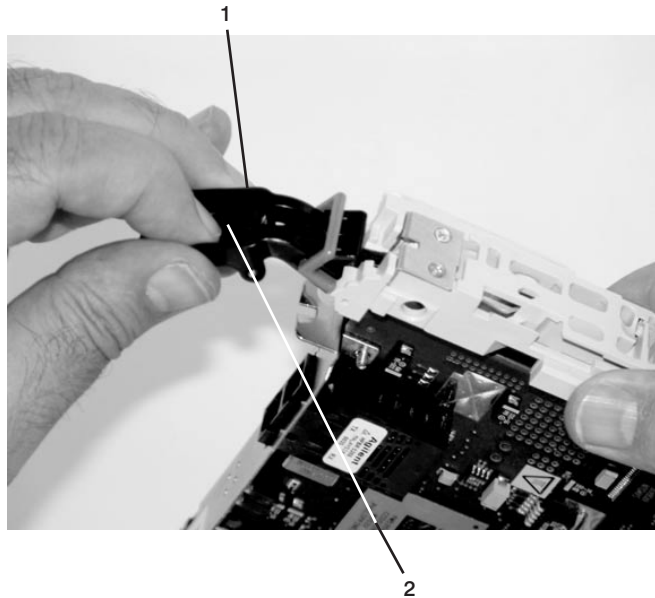
1 Handle
2 Lock

Short Adapter or Blank Filler Installation

Use the following procedure to install a short adapter or blank filler.

1. Install the adapter or blank filler by doing the following:

    a. Place the adapter or blank filler into the cassette so that the upper-left corner of the adapter engages the adjustable top adapter-retaining clip as shown in the following figure.
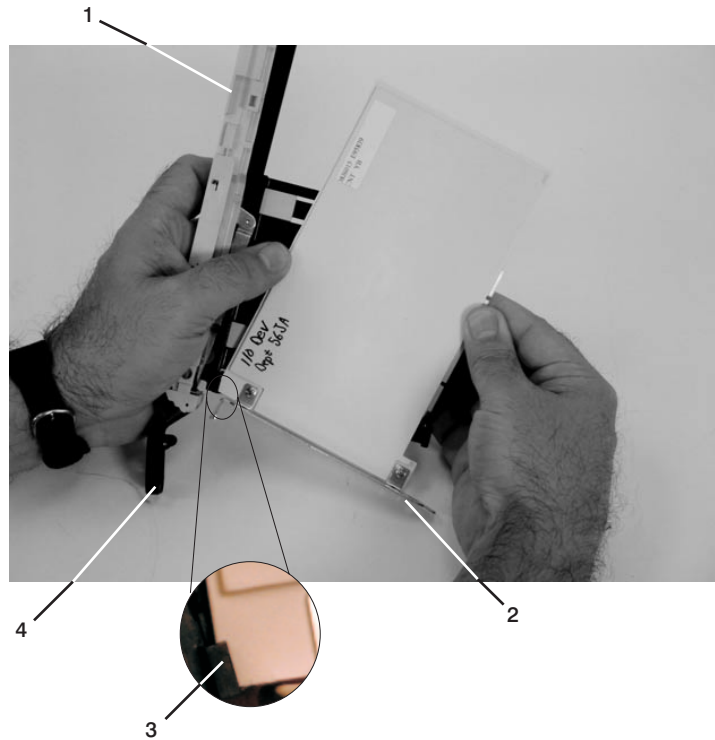
1	Cassette Linkage Assembly	**3**	Retaining Clip
2	Bottom of Tailstock	**4**	Handle

b. Rotate the adapter so that the adapter engages the slot in the bottom adapter-retaining clip and the top corner of the adapter is seated into the adjustable top adapter-retaining clip.

> **Note:** If the adapter is not a full-height adapter, you must slide the adjustable top adapter-retaining clip downward until the lower edge of the adapter is seated into the slot on the bottom adapter-retaining clip.
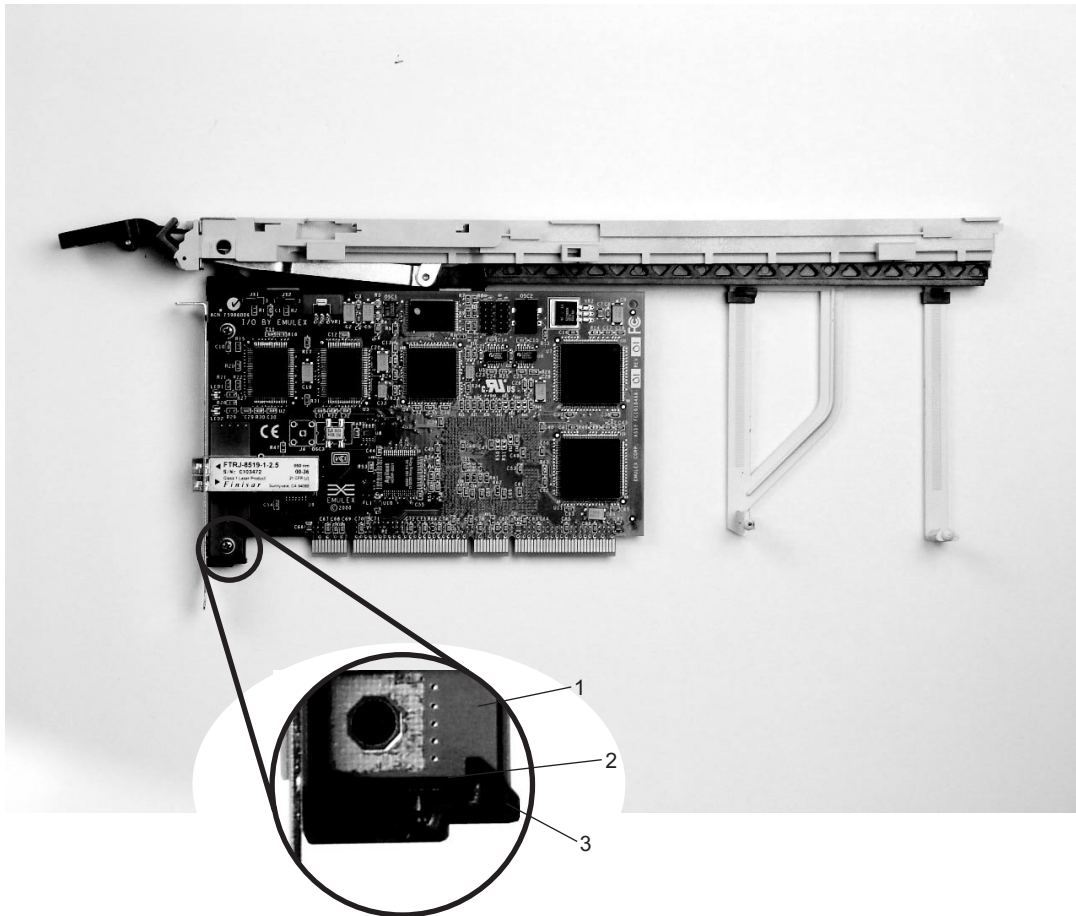
| **1** Adapter | **3** Bottom Retaining Clip |
| **2** Slot | |

c. Slide the short-adapter retaining arm toward the adapter or blank filler on the cassette linkage rail.

1) If the short-adapter retaining arm has been removed from the cassette linkage rail, install the short-adapter retaining arm and then slide the arm until it contacts the adapter or blank filler as shown in the following figure.
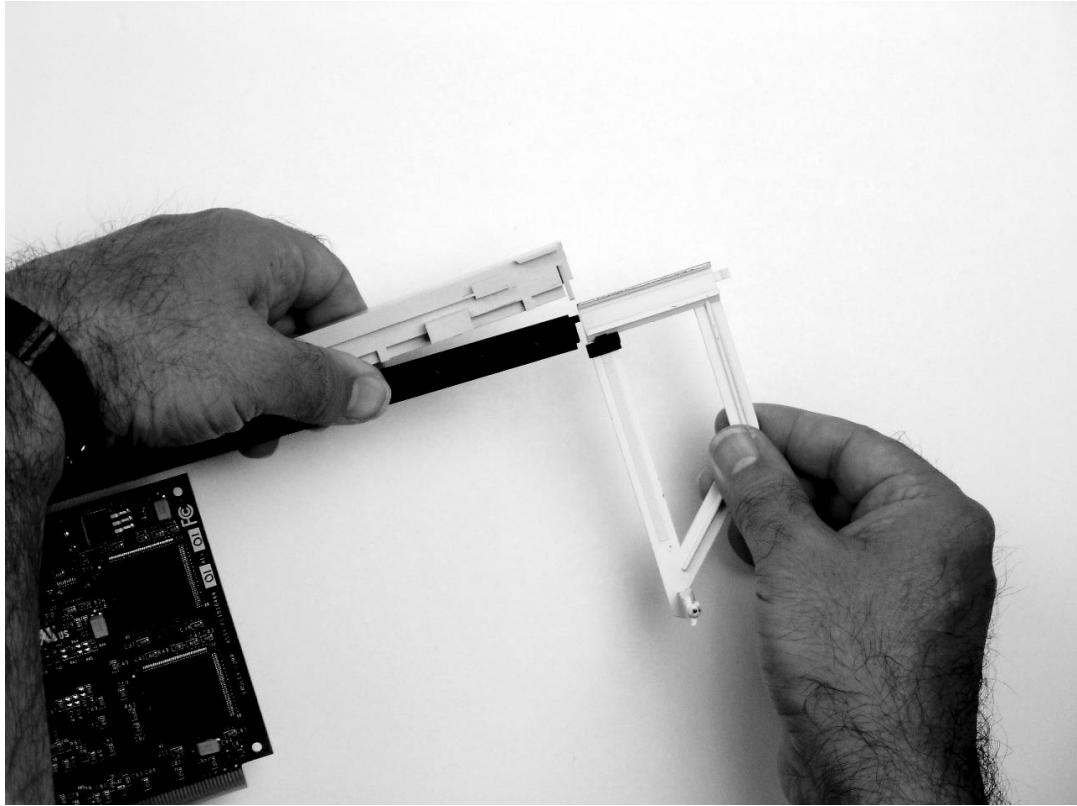
d. Ensure that the adjustable top retainer clip catches the corner of the adapter as shown in the following figure:
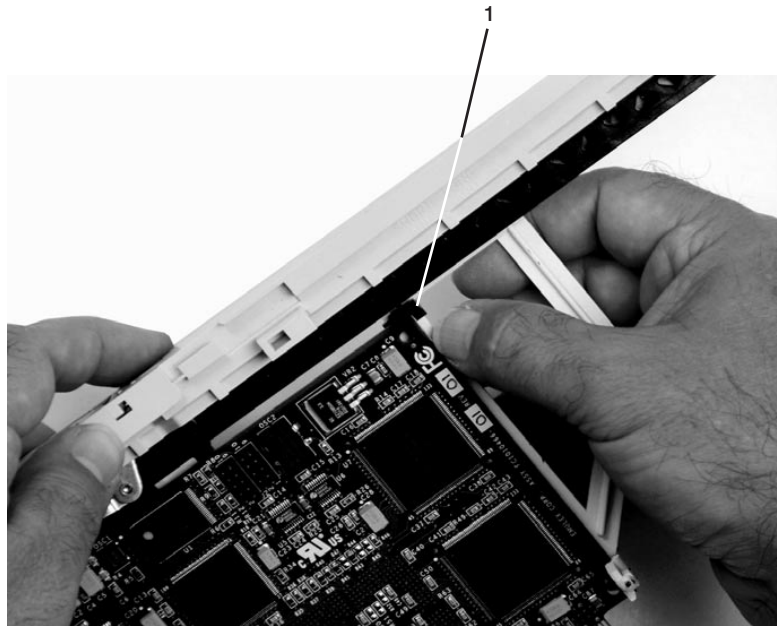
1 Short Adapter Top Retaining Clip

e. Use the lower short adapter-retaining clip to engage and hold the bottom of the adapter.

   Note: It might be necessary to apply pressure to engage and hold the bottom of the adapter.
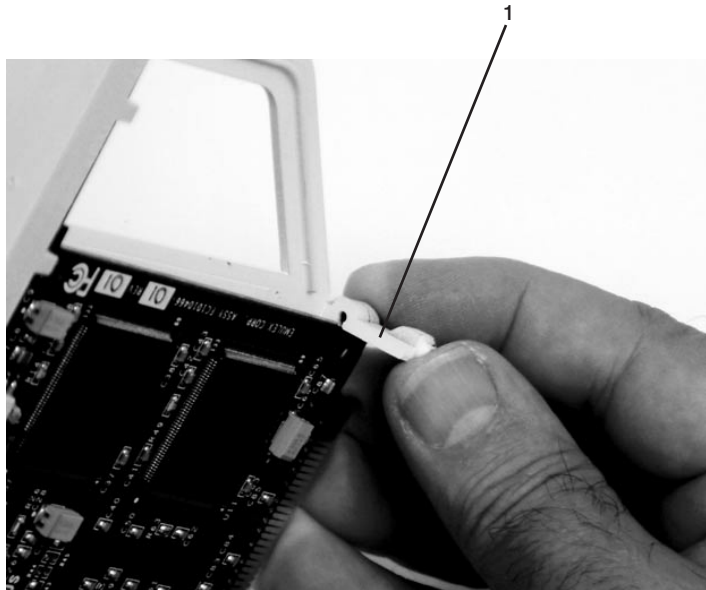
1 Lower Short Adapter Arm Clip

f. To hold the top of the adapter, slide down the adjustable top adapter-retaining clip on the retaining arm. Ensure that the bottom edge of the adapter is held by the lower part of the adapter retaining arm.
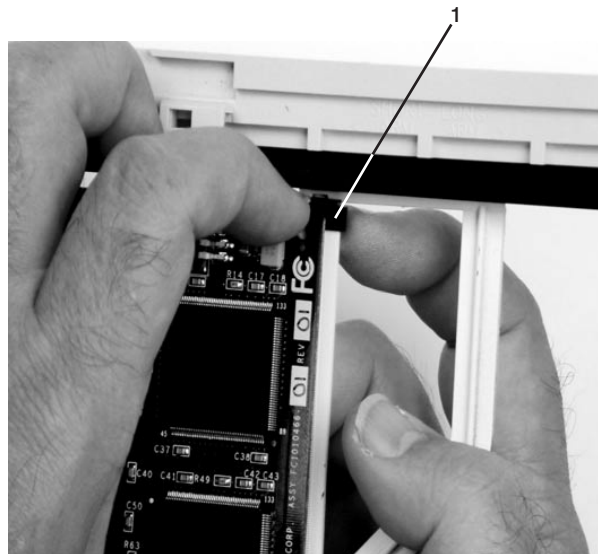
1 Short Adapter Adjustable Retaining Clip

g. Press the lock on the handle, and rotate the adapter handle until it is in the down position (adapter or blank filler moves up into the cassette assembly).
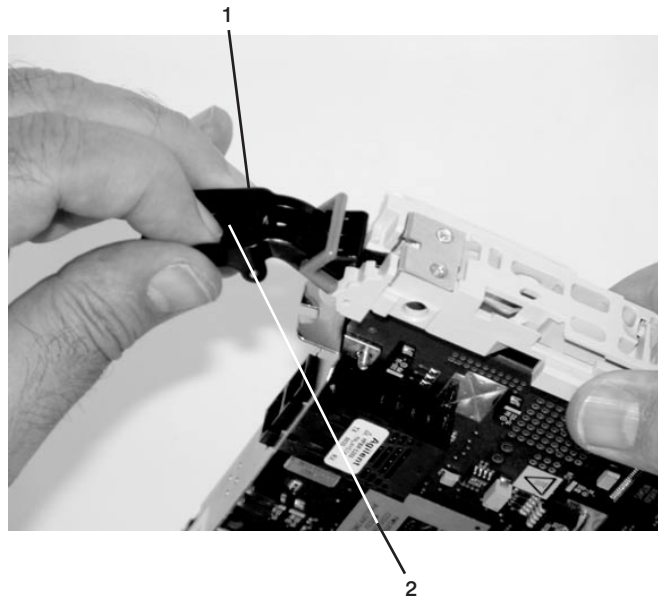
1 Handle
2 Lock

Ensure the right end of the cassette linkage rail moves up into the cassette linkage assembly as shown in the following figure:
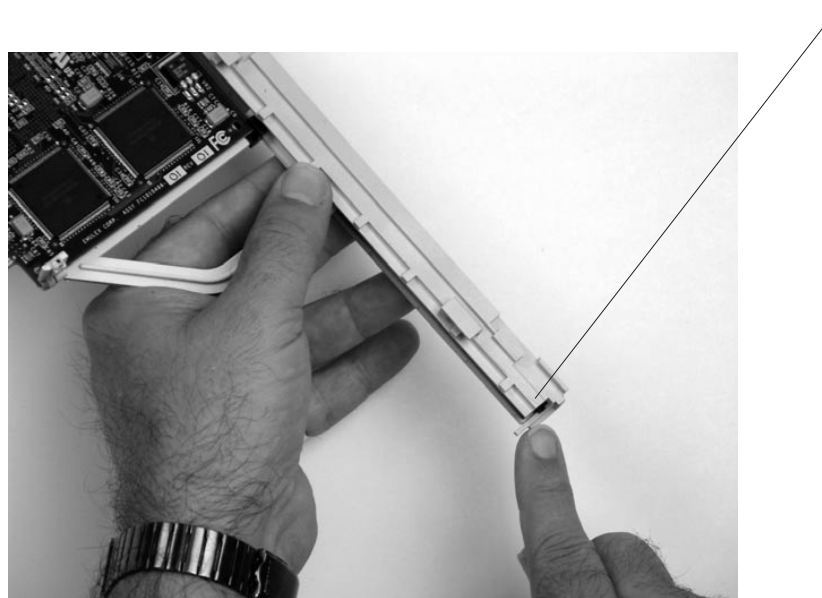
1 Right End of Cassette Linkage

h. Position the adapter and cassette assembly with the handle on the left (in the down position) and the top facing away from you.
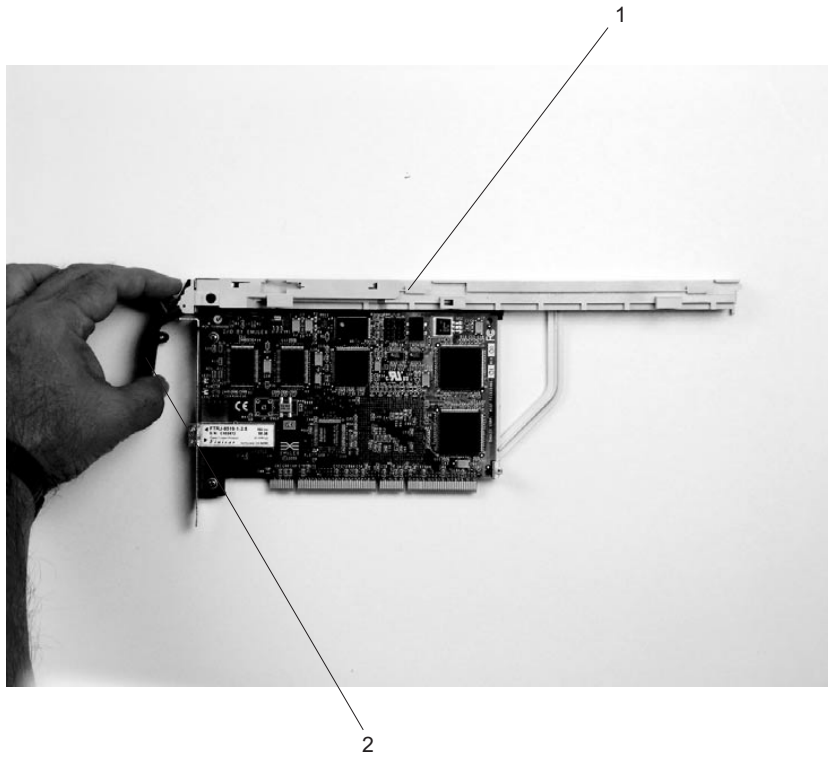
1 Top of Cassette
2 Handle

i. Install the cover on the cassette assembly:

1) Place the cassette cover on the cassette assembly as shown below. Slide the cover toward the handle until the hole in the cover aligns with the hole in the cassette assembly.
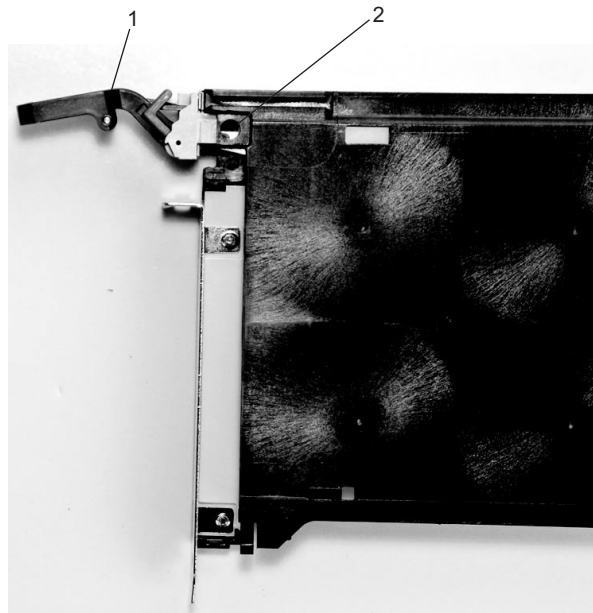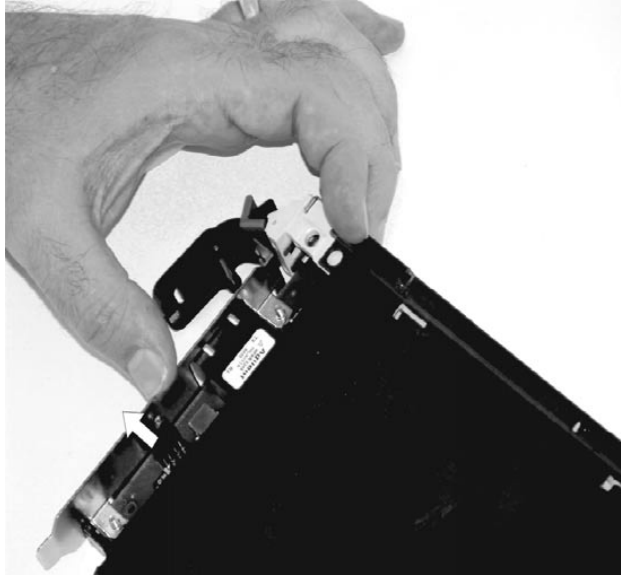
1 Handle
2 Holes Aligned

j. Install the bezel assembly using the following procedure.
1) Carefully slide the bezel onto the cassette assembly.
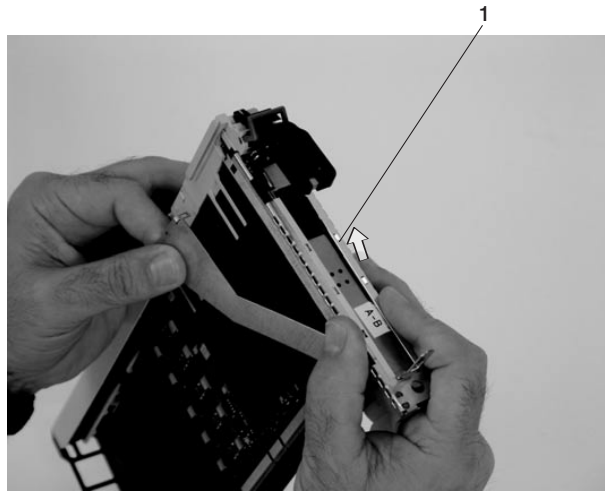
1 Bezel

2) Align and insert the cover arm latch in the hooked notch in the bezel.
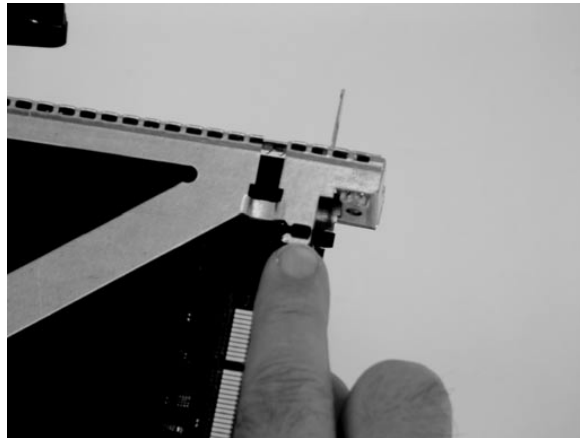
3) Align the top of the bezel assembly into the grooves on the top of the cassette assembly. Push the bezel onto the cassette linkage until the tab on the top of the bezel is seated in the recess of the cassette assembly.
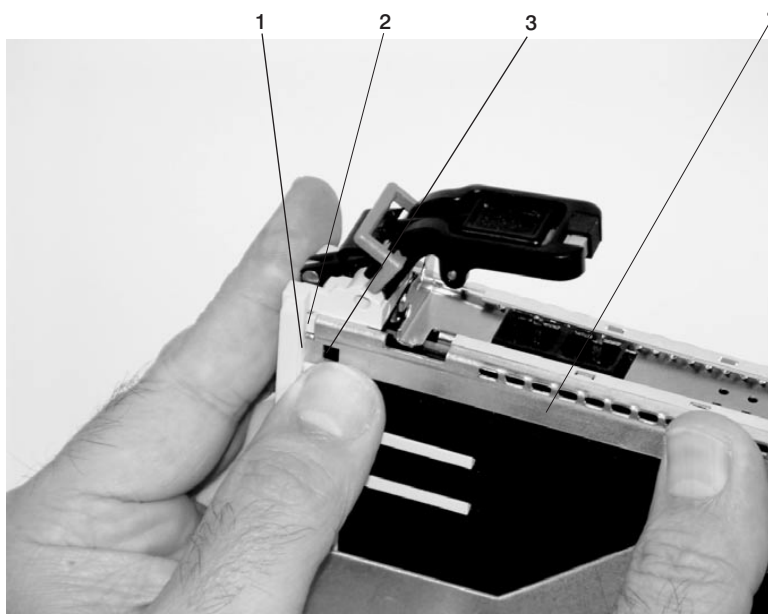
1 Recess   **3** Tab
2 Groove   **4** Bezel Assembly

4) Insert the two tabs on the bezel extension into the two slots on the cassette assembly.
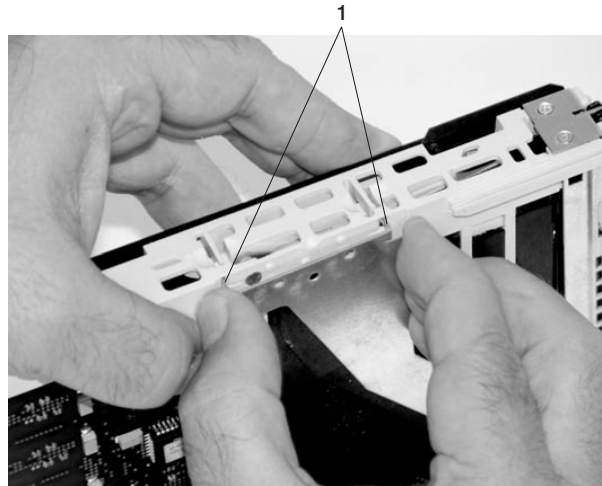
1 Tabs

k. Check for the following:

   1) Ensure that the extension arm engages the pins on the cassette. You should be able to see the three pins in the holes in the arm. The bezel tab should be seated as shown in the following figure.
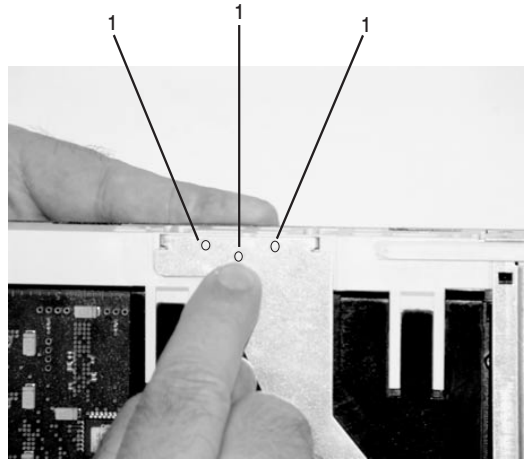
1 Pin

   2) Ensure the cover arm latch is completely pressed into the hooked slot on the bezel as shown.
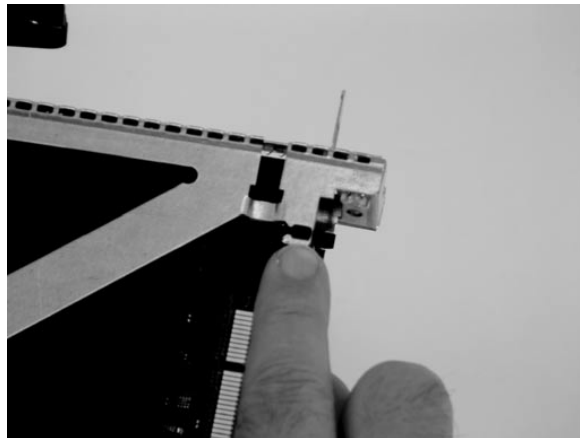
3) Turn the cassette assembly over so the cover is up. Check the cover latch to ensure it is holding the bezel to the cover as shown.
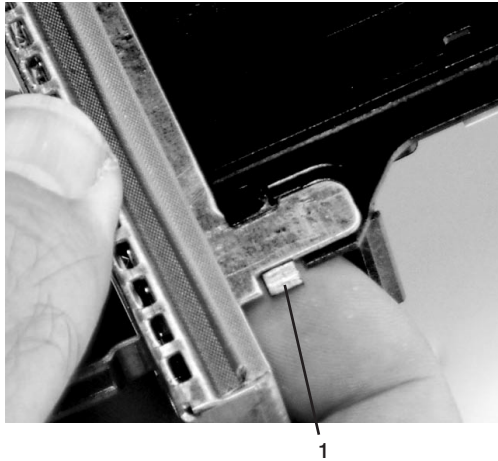
1 Cover Latch

l. Ensure the holes are aligned, and insert the bushing as shown.
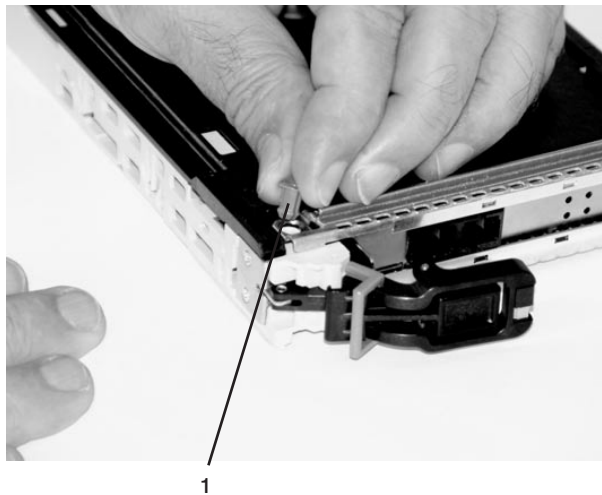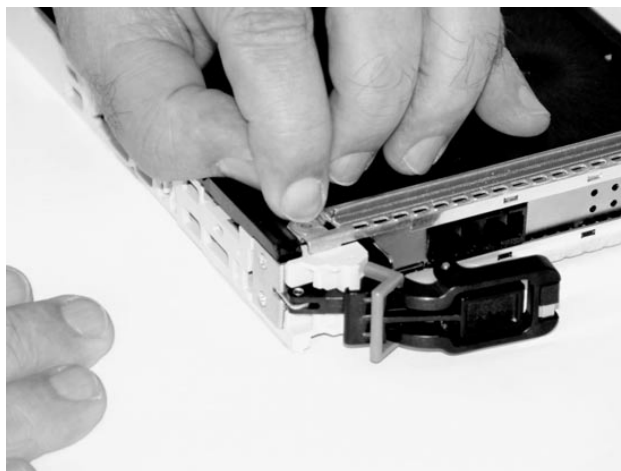
1 Bushing

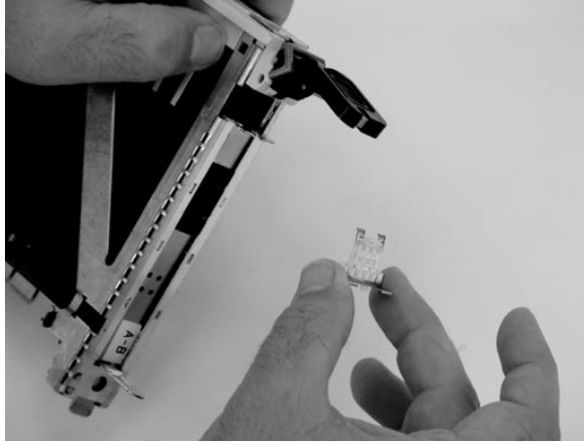m. Insert the bushing lock pin into the hole in the bushing and push it in until it seats.

1 Bushing Lock Pin

n. By pulling on both sides, ensure the gray plastic locking bar on the handle is pulled into the unlocked position. Raise the handle on the cassette linkage until it locks into the up position (the blank filler or adapter moves downward).
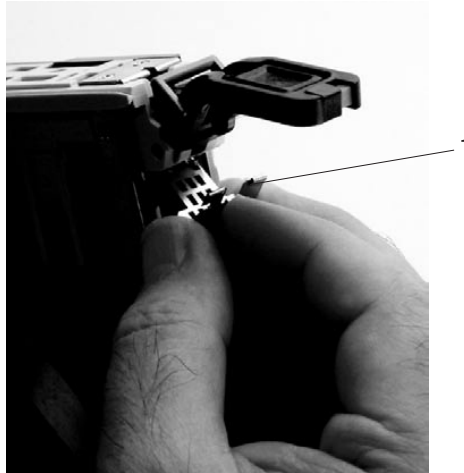

1 Handle
2 Gray Plastic Locking Bar

o. To install the metal EMC shield on the adapter bracket, do the following:

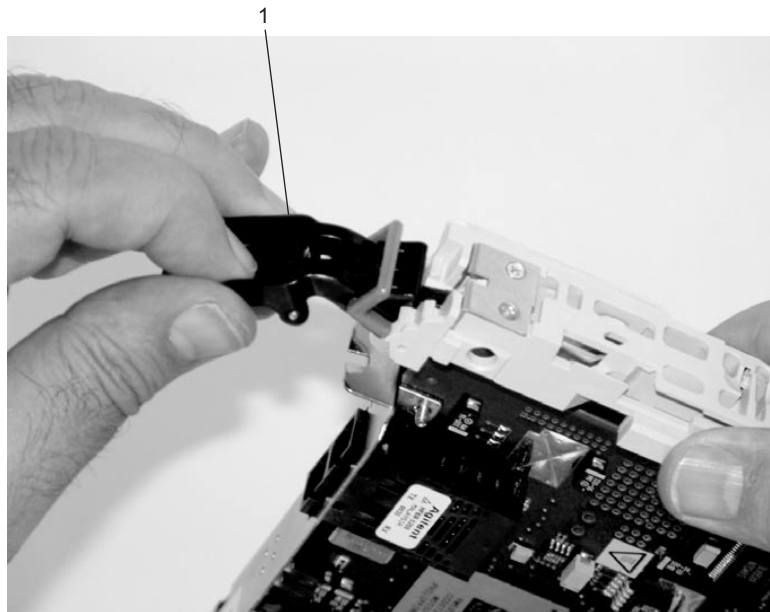1) Ensure that the shield slides up inside the top of the cassette.

1 Metal EMC Shield

2) The metal shield has clips that slide over the top of the tailstock. Ensure that these clips are holding the EMC shield to the tailstock.


1 Top of Tailstock

p. Press the lock on the handle and rotate the adapter handle until the handle is in the down position (adapter or blank filler moves up into the cassette assembly).

1 Handle

q. Using the system documentation, determine if the adapter you are installing is hot-swappable. If the adapter is hot-swappable, move the slider on the color indicator to allow the orange to be visible. If the adapter is not hot-swappable, the blue color is visible.
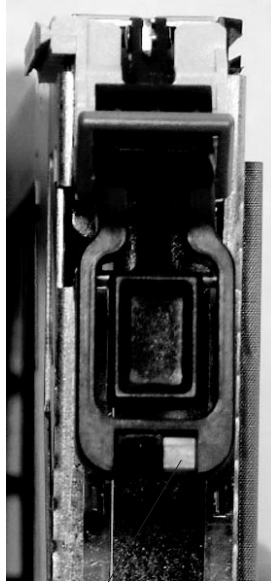
1 Orange for Hot-Swappable   **2** Blue for Not Hot-Swappable
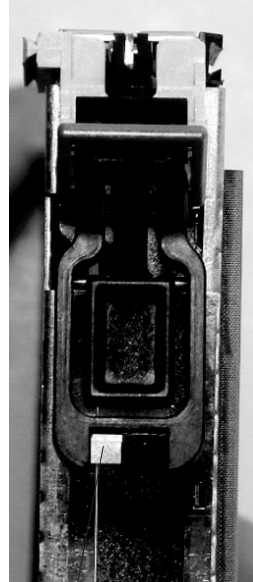
r. The adapter is ready to be installed into a system or an I/O drawer.

Long Adapter Installation

Use the following procedure to install a long adapter.

Note: Ensure that both the retaining arms for the long and short adapters are removed from the cassette linkage. Before continuing, see step 1a on page 846 to remove the arms.

1. Install the long adapter by doing the following:

    a. Place the adapter into the cassette so that the upper left corner of the adapter engages the top adjustable adapter-retaining clip as shown in the following figure:
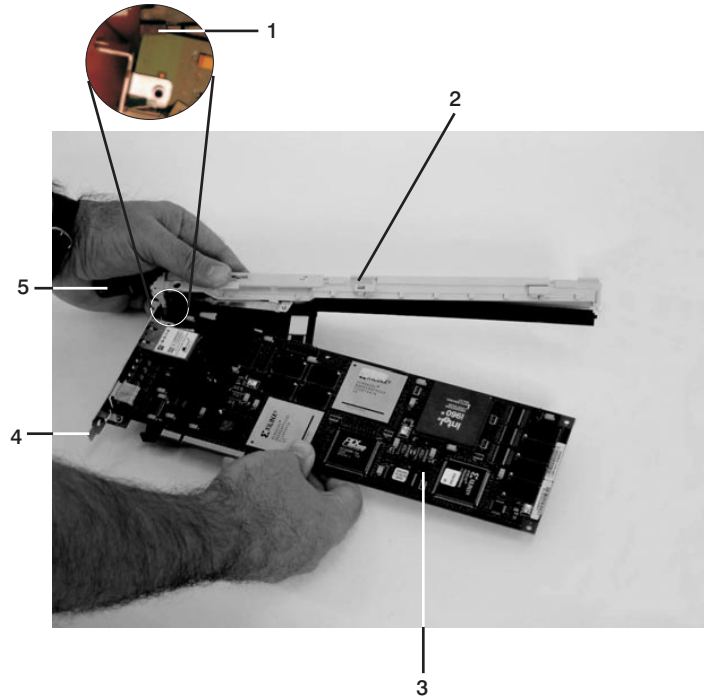
1	Top Adapter-Retaining Clip	**3**	Adapter
2	Cassette Linkage Assembly	**4**	Bottom of Tailstock
		5	Handle

b. Rotate the adapter so that the adapter engages the slot in the bottom retaining clip and the top corner of the adapter is seated into the top adjustable adapter-retaining clip.

> **Note:** If the adapter is not a full-height adapter, slide the top adjustable adapter-retaining clip downward until the lower edge of the adapter is seated into the slot on the bottom retaining clip.
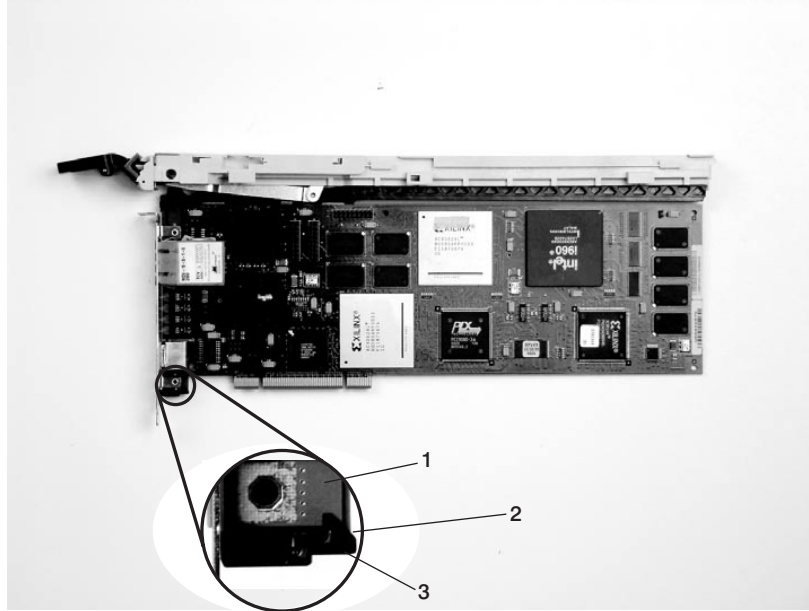
1 Adapter   **3** Bottom Retaining Clip
2 Slot

c. Install the long adapter-retaining arm onto the cassette linkage rail, as shown in the following figure, and slide the arm toward the adapter.
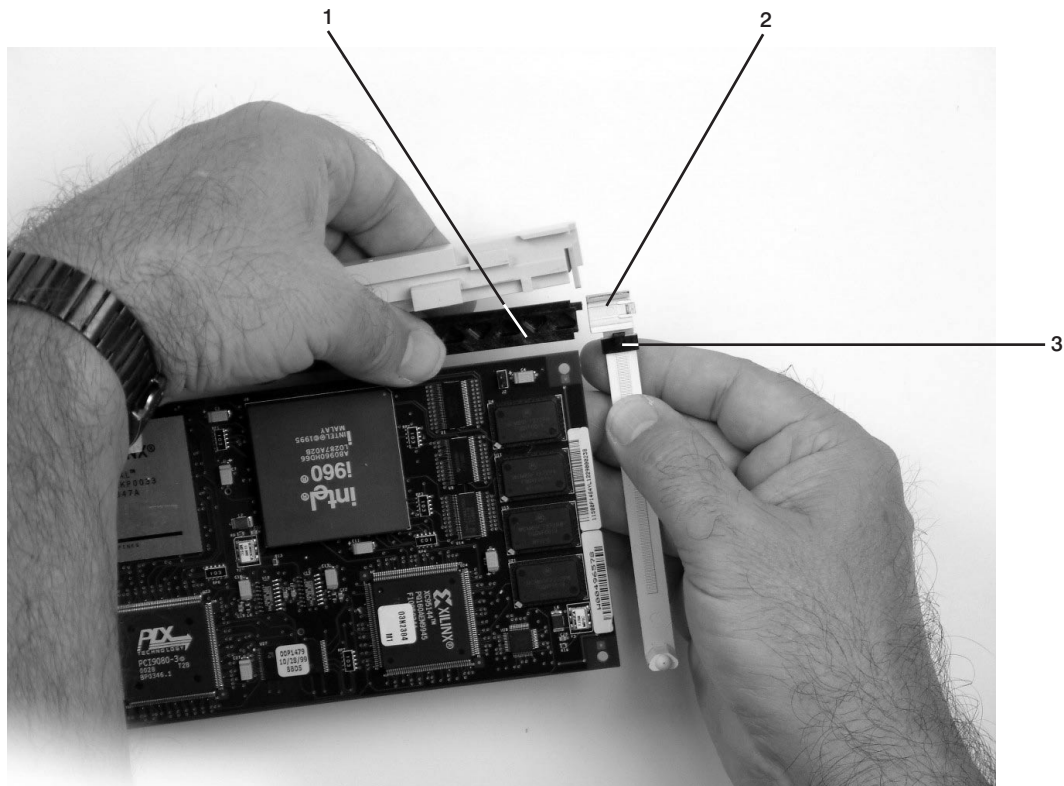
1 Cassette Linkage Assembly   **3** Top Adapter Retaining Clip
2 Adapter Retaining Arm

d. Ensure that the top adjustable adapter-retaining clip catches the corner of the adapter as shown in the following figures.

Long Arm Adjustable Retaining Clip
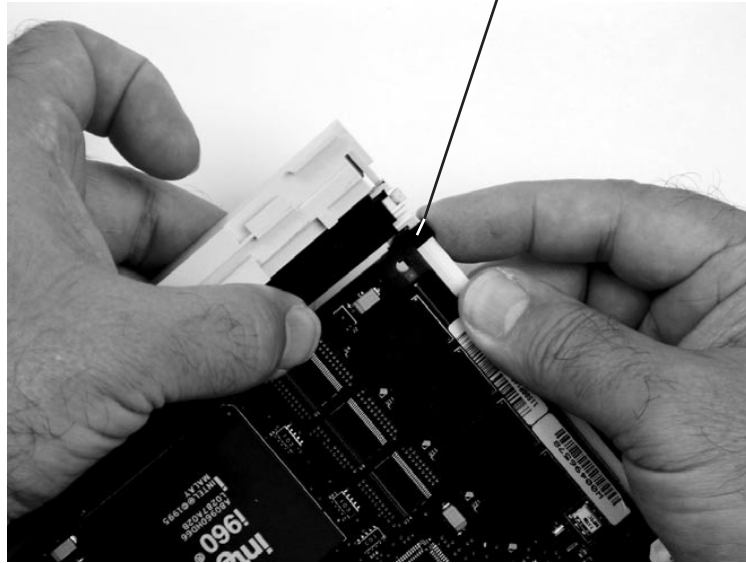
1 Long Arm Adjustable Retaining Clip

e. Ensure that the bottom edge of the adapter is held by the groove in the lower part of the adapter-retaining arm.
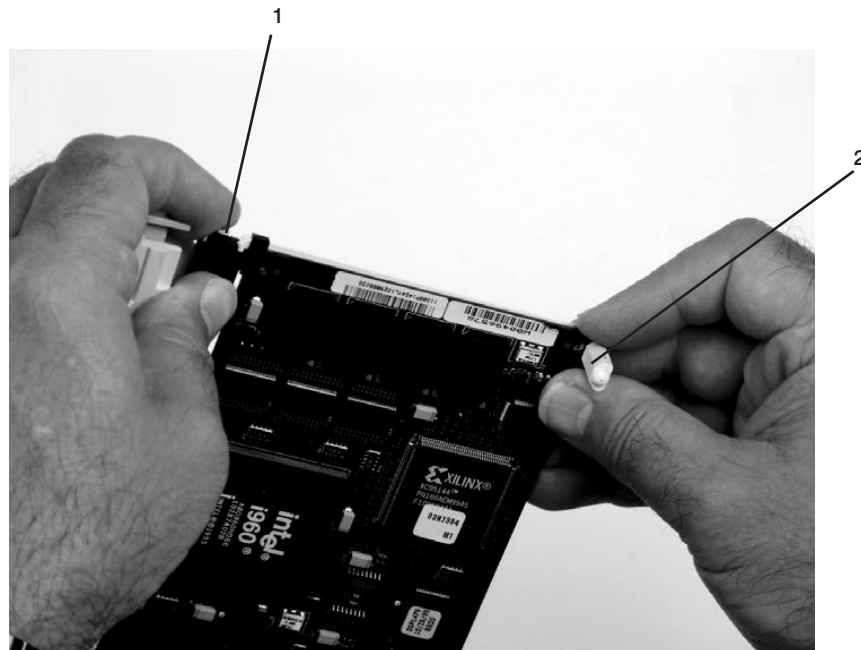
1 Long Adapter Arm Adjustable Retaining Clip **2** Long Adapter Retaining Arm Slot

f. To hold the top of the adapter, slide down the top adjustable adapter-retaining clip on the retaining arm.
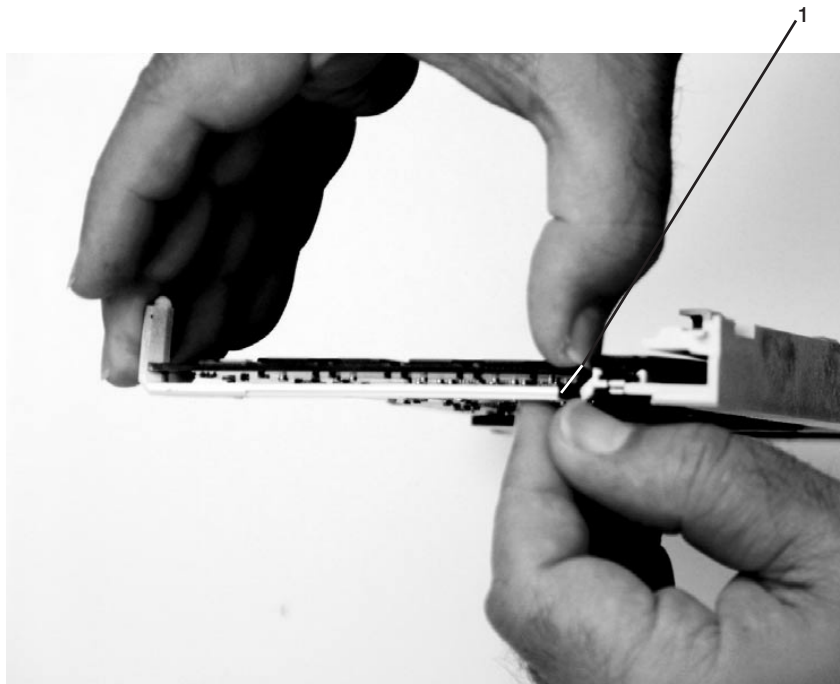
1 Long Adapter Retaining Arm

g. Press the lock on the handle and rotate the adapter handle until it is in the down position (adapter or blank filler moves up into the cassette assembly).
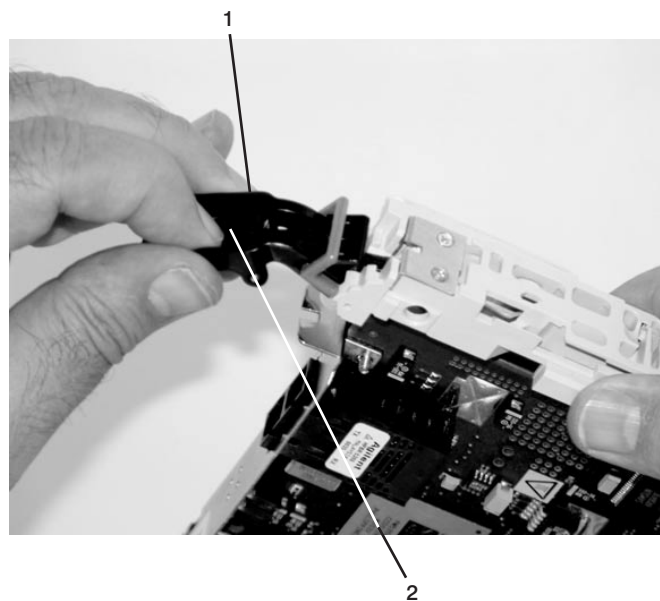
1 Handle
2 Lock

Ensure the right end of the cassette linkage rail moves up into the cassette linkage assembly as shown below:
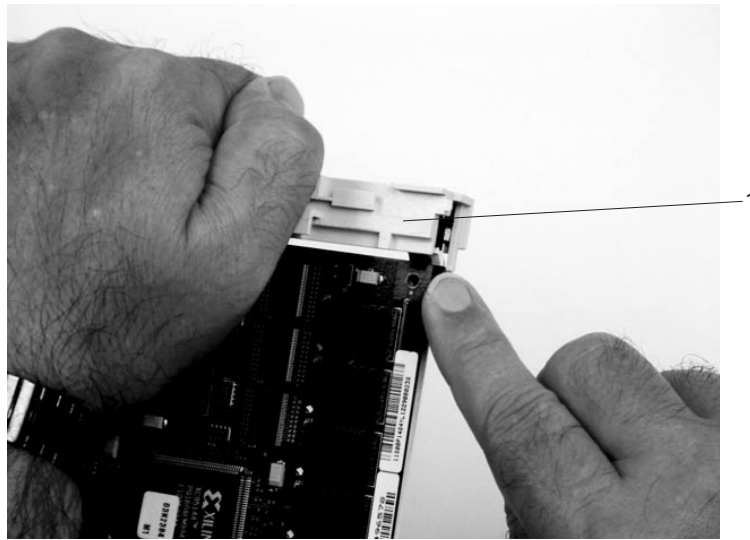
1 Right End of Cassette Linkage

h. Position the adapter and cassette assembly with the handle on the left (in the down position) and the top facing away from you.
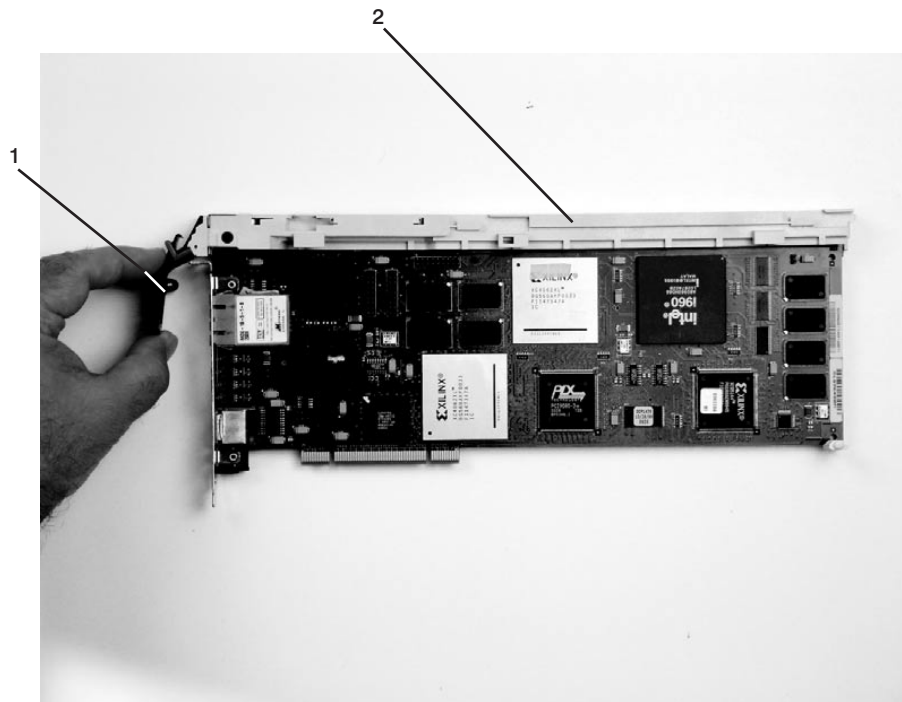
1 Handle
2 Top of Cassette

i. Install the cover on the cassette assembly by placing the cassette cover on the cassette assembly as shown below. Slide the cover toward the handle until the hole in the cover aligns with the hole in the cassette assembly.
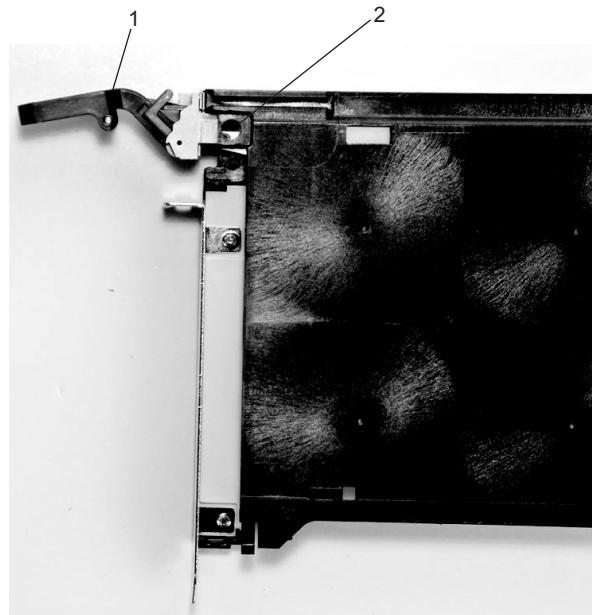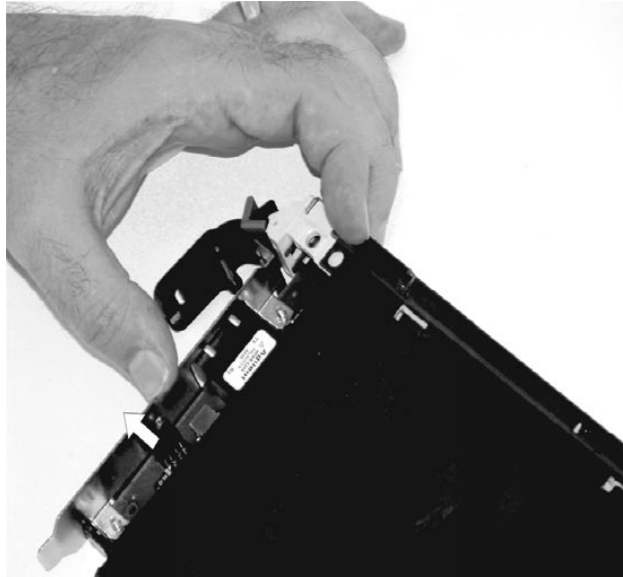
1 Top of Cassette
2 Handle

j. Install the bezel assembly using the following procedure:
   1) Carefully slide the bezel onto the cassette assembly.
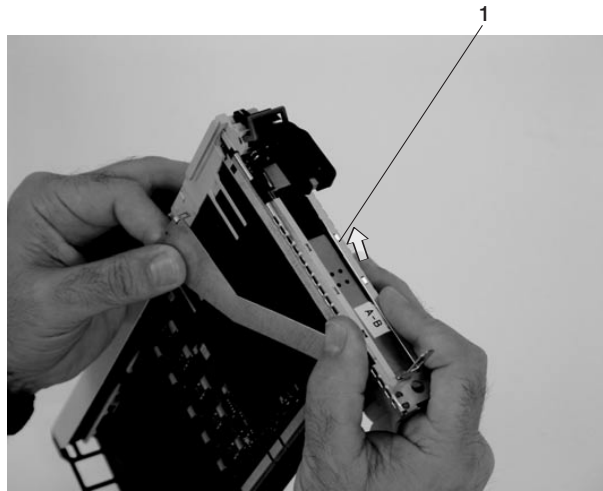
1 Bezel

   2) Align and insert the cover arm latch in the hooked notch in the bezel.
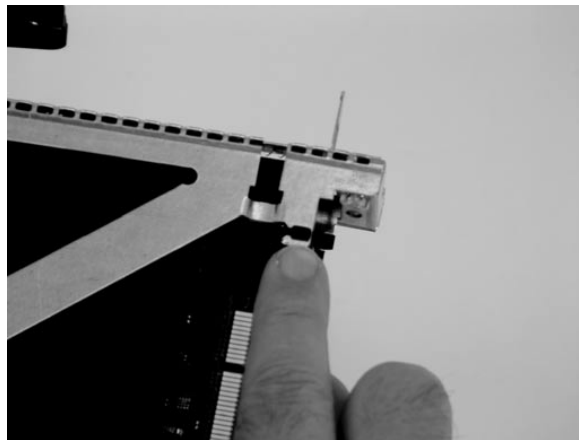
3) Align the top of the bezel assembly into the grooves on the top of the cassette assembly and then push the bezel onto the cassette linkage until the tab on the top of the bezel is seated in the recess of the cassette assembly.
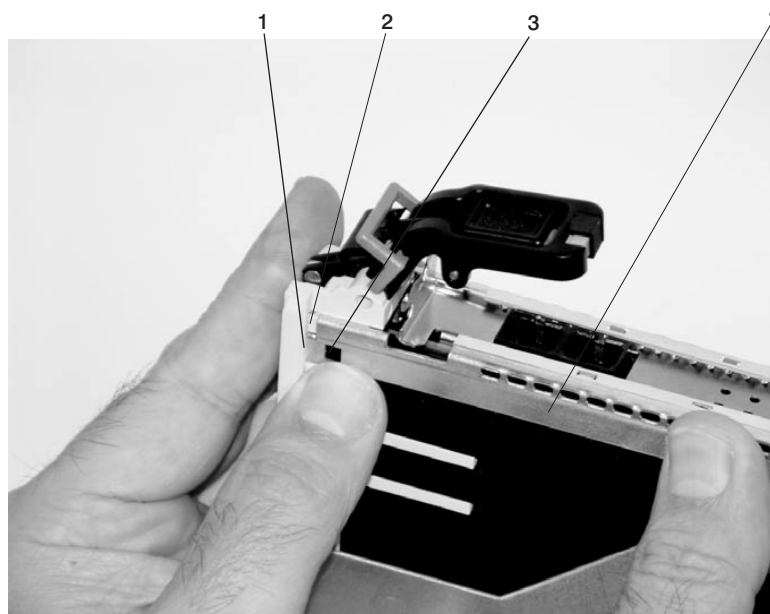
1	Recess	**3**	Tab
2	Groove	**4**	Bezel

4) Insert the two tabs on the bezel extension into the two slots on the cassette assembly.
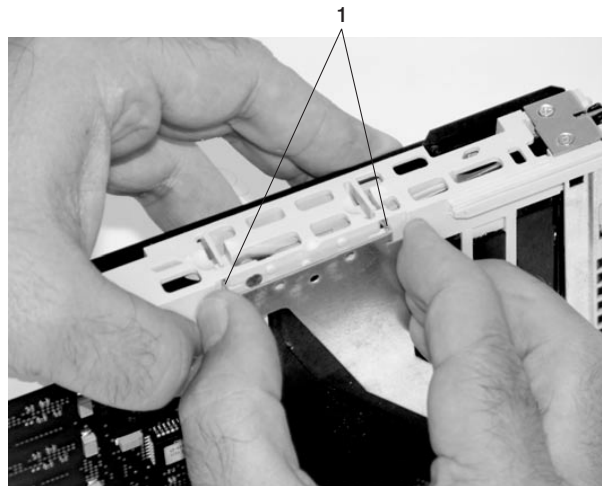
1 Tabs

k. Check for the following:

   1)   Ensure that the extension arm engages the three pins on the cassette. You should be able to see the pins in the holes in the arm. The bezel tab should be seated as shown in the following figure.
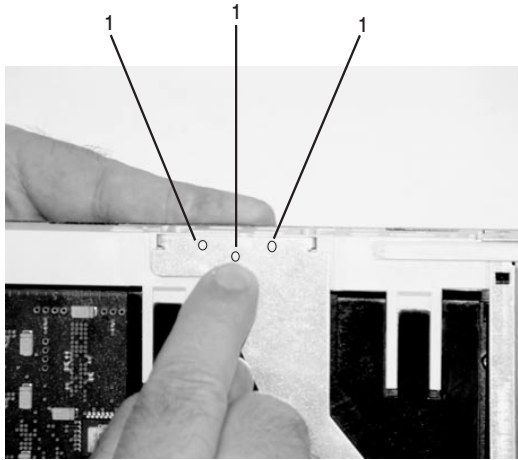
1 Pins

   2)   Ensure the cover arm latch is completely pressed into the hooked slot on the bezel as shown.
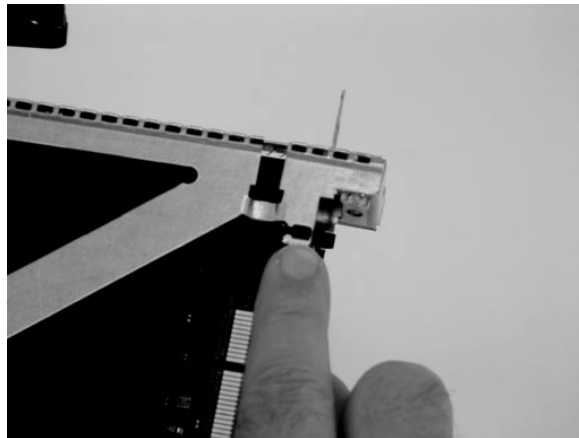
3) Turn the cassette assembly over so the cover is up and check the cover latch to ensure it is holding the bezel to the cover as shown.
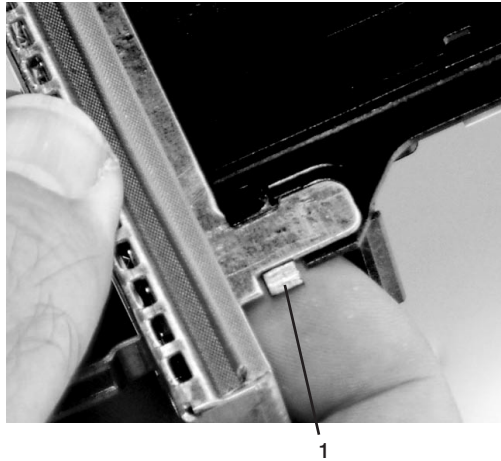
1 Cover Latch

l. Position the adapter with the cover side up. Ensure the holes are aligned and insert the bushing as shown.
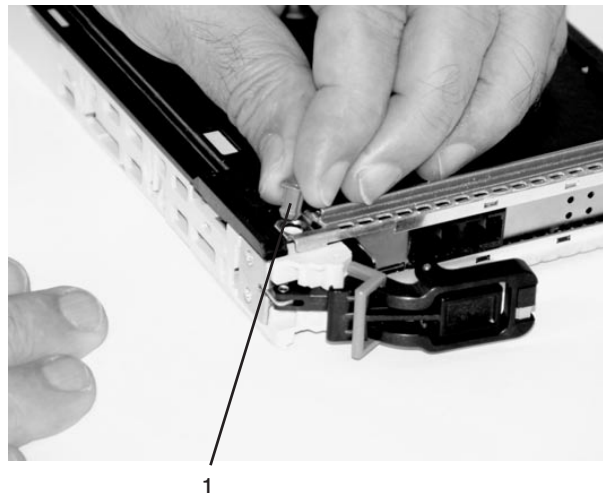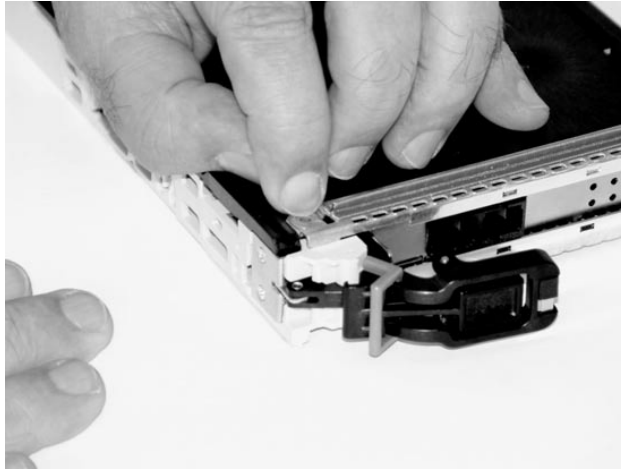
1 Bushing

m. Insert the bushing lock pin into the hole in the bushing. Push on the pin until it seats.

1 Bushing Lock Pin

n. By pulling on both sides, ensure the gray plastic locking bar on the handle is pulled into the unlocked position. Raise the handle on the cassette linkage until it locks into the up position (the blank filler or adapter moves downward).

1 Handle
2 Gray Plastic Locking Bar

o. To install the metal EMC shield on the adapter bracket, do the following:

1) Ensure that the shield slides up inside the top of the cassette.

1 Metal EMC Shield

2) The metal shield has clips that slide over the top of the tailstock. Ensure that these clips are holding the EMC shield to the tailstock.

1 Top of Tailstock

p. Press the lock on the handle and rotate the adapter handle until the handle is in the down position (adapter or blank filler moves up into the cassette assembly).

1 Handle

q. Using your system documentation, determine if the adapter you are installing is hot-swappable. If the adapter is hot-swappable, move the slider on the color indicator to allow the orange to be

visible. If the adapter is not hot-swappable, the blue color is visible.
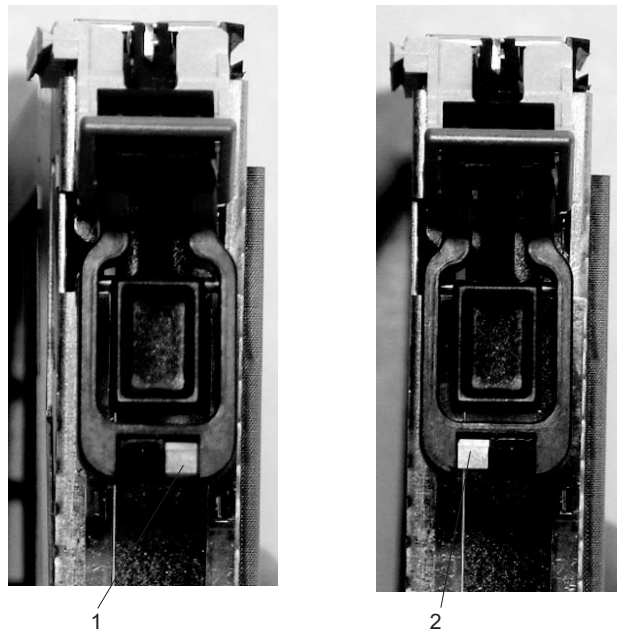
1 Orange for Hot-Swappable
2 Blue for Not Hot-Swappable

r. The adapter is ready to be installed into a system or an I/O drawer. Refer to your system documentation for more information.

Blind-Swap Cassette (BSC) Assembly Procedure

Removal

1. Remove the PCI card assembly from the I/O subsystem (for hot-pluggable adapters see "Removing a Hot-Pluggable PCI Adapter" on page 833, for non-hot-pluggable adapters see "Removal" on page 825).
2. Position the assembly on a flat surface, with the tailstock to the left and the card connector toward you.
3. Remove the three screws from the top cover groove, and the two screws at the heel corner.
4. Pop the rear end of the cover off the guide bump and remove the cover.
5. Position the assembly on a flat surface, with the tailstock to the right and the card connector toward you.
6. Remove the three screws from the top of the bezel assembly.
7. Position the assembly on a flat surface, with the tailstock to the left and the card connector toward you.
8. Flex the support arm downward until the top clip on the card arm is accessible.
9. Use a small screwdriver to lift the guide lock, and slide the card arm away from the PCI card until the card end is free.
10. Push the lower-front heel off the card, and remove the PCI card from the assembly.

Replacement

1. Ensure that you have the following parts:
   - Bezel and linkage subassembly
   - Cover
   - Clip
   - Insertion Clip (see the following note)
   - Short card arm
   - Long card arm
   - Screws (10; 2 are extra)

   Note: If you are installing a Gigabit Ethernet (FC 2969 type 9U), Ultra3 SCSI (FC 6203 Type 4Y), or 10/100 BaseT Ethernet (FC 4962 Type AF), use the following additional clips to help when you are seating the adapter during installation.

   There are different clips **(1)** for each adapter type **(2)**:
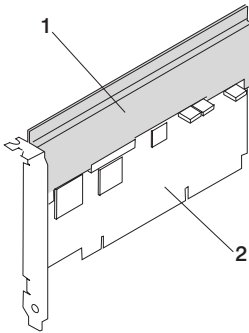
44P0323	Clip for Gigabit Ethernet FC 2969 type 9U
44P0324	Clip for Ultra3 SCSI FC 6203 Type 4Y
44P0321	Clip for 10/100 BaseT Ethernet FC 4962 Type AF

2. Position the bezel and linkage subassembly with the bezel to the left, on a flat ESD surface.
3. Pivot the bezel so that the lower end is away from the linkage subassembly.

   Note: Ensure that the top front clip is in the uppermost position before continuing.
   a. If the adapter card is full-height (that is, taller than the tailstock of the card), do the following:
      1) Place the top corner of the PCI card so that it seats in the top front clip, as shown in the following diagram:
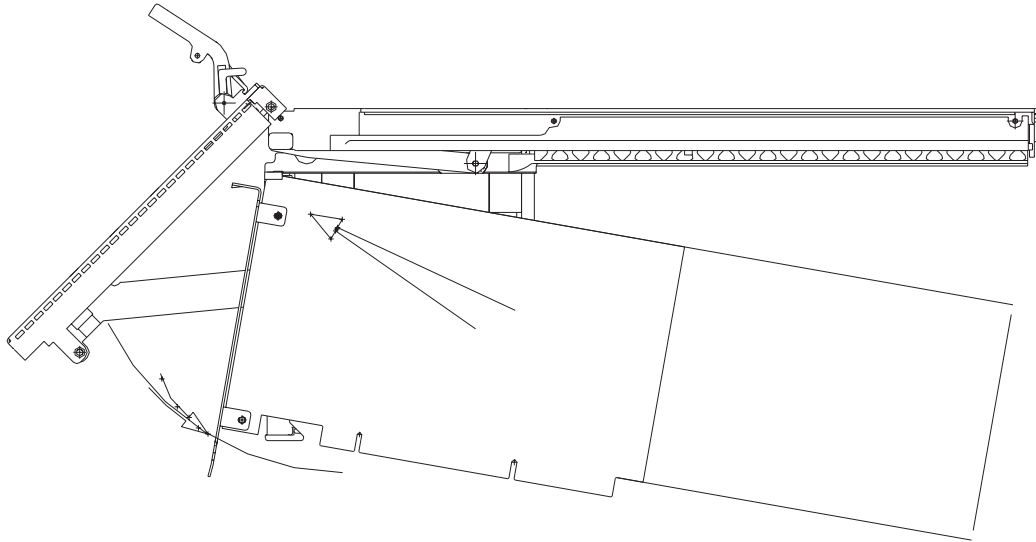
      2) Rotate the bottom of the tailstock to fit in the front heel clip.
      3) To remove any slack in the fit, use pliers or a screwdriver to adjust the top front clip downward.
   b. If the adapter card is not full-height (that is, shorter than the tailstock of the card), do the following:
      1) Place the bottom corner of the PCI card on the front heel clip.
      2) To remove any slack between the top and bottom clips, use pliers or a screwdriver to adjust the top front clip downward. If the top clip is pushed too far down without engaging the card, remove the top front clip by popping it off the rail. Reattach the clip and start again.

4. Attach the appropriate short card (if the card does not extend beyond the mark at the top of the linkage subassembly) or long card arm to the support arm of the linkage subassembly as follows:
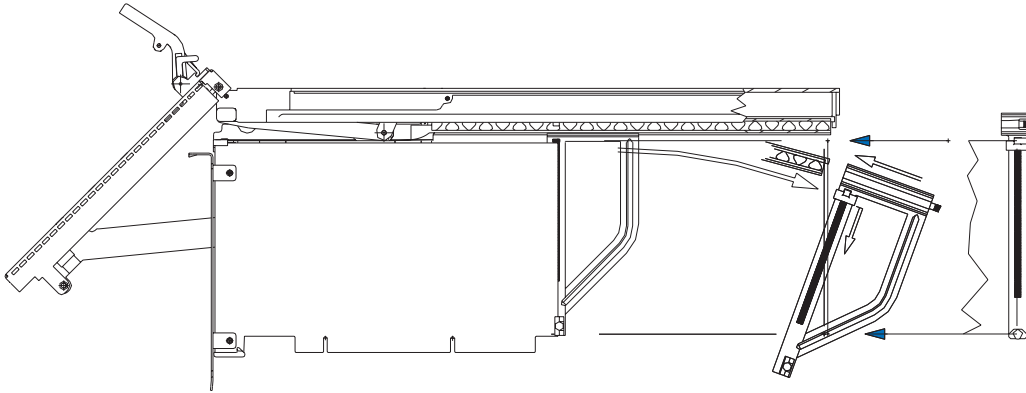
Note: Ensure the card arm is fully on the track and clears the end of the support arm of the linkage subassembly. A flat-head screwdriver might be needed to push the card arm in the remaining distance.

a. Bend the support arm downward, to allow the card arm to slide onto the end of the support arm.

b. Slide the card arm until the top-rear and lower clips align with the edge of the card.

c. Press the lower clip under the bottom edge of the card. The bottom of the clip should be even with the bottom of the card.

d. Slide the top rear clip of the card arm downward to engage the top corner of the card. The card should now be securely stabilized in all the clips, as shown in the following illustration.
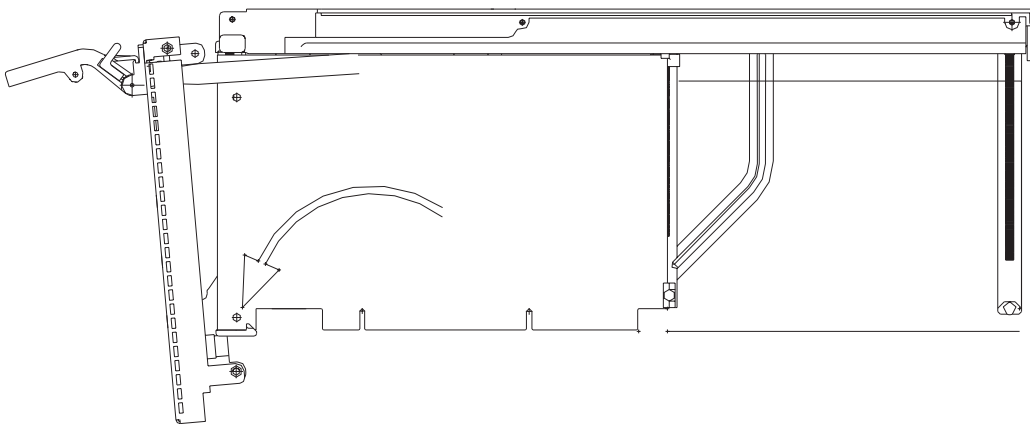
5. Tilt the top of the bezel away from the PCI card while lowering the bottom of the tailstock into the bottom of the bezel, as shown in the following illustration.
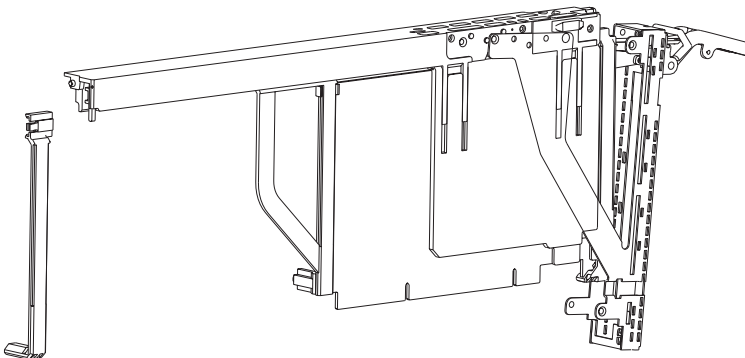
6. When the lower corner of the card is fully seated into the bezel, rotate the top of the bezel over the tailstock of the card.
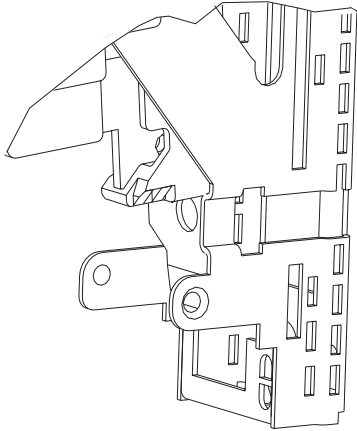
7. Position the bezel fully onto the assembly by snapping the three small holes on the bezel arm over the three small embossments on the linkage assembly, as shown in the following illustration.
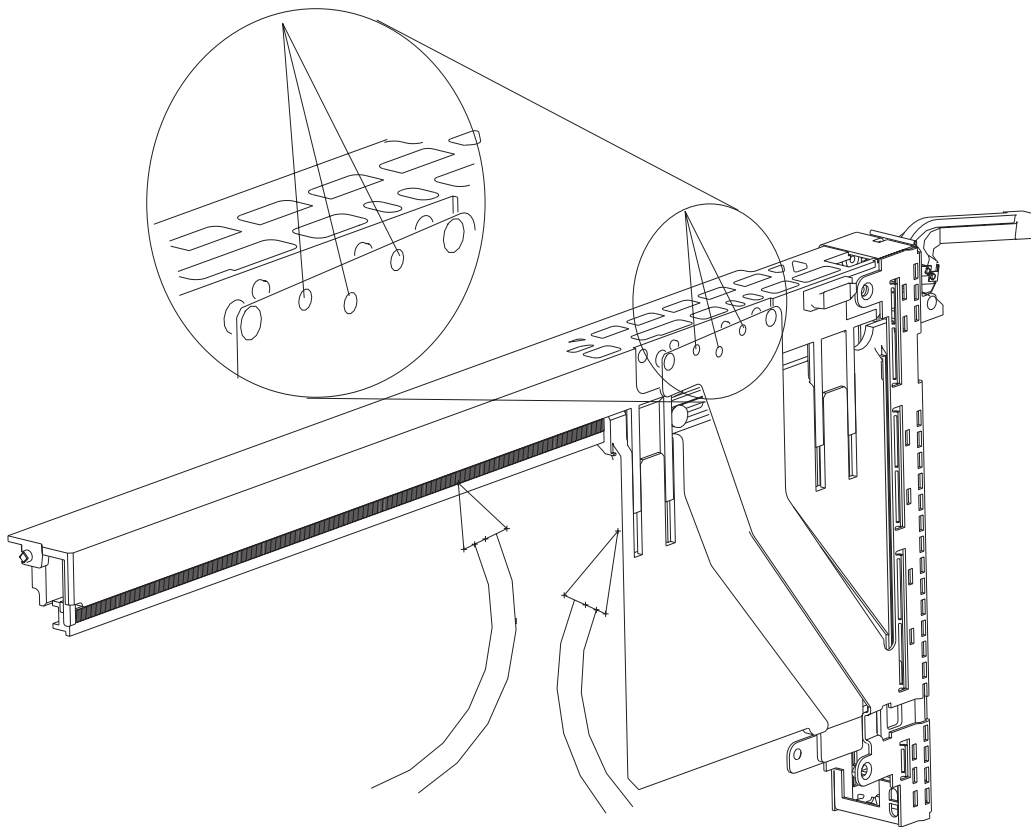
8. Secure the bezel arm to the linkage assembly with three small screws in the sequence shown in the following illustration.
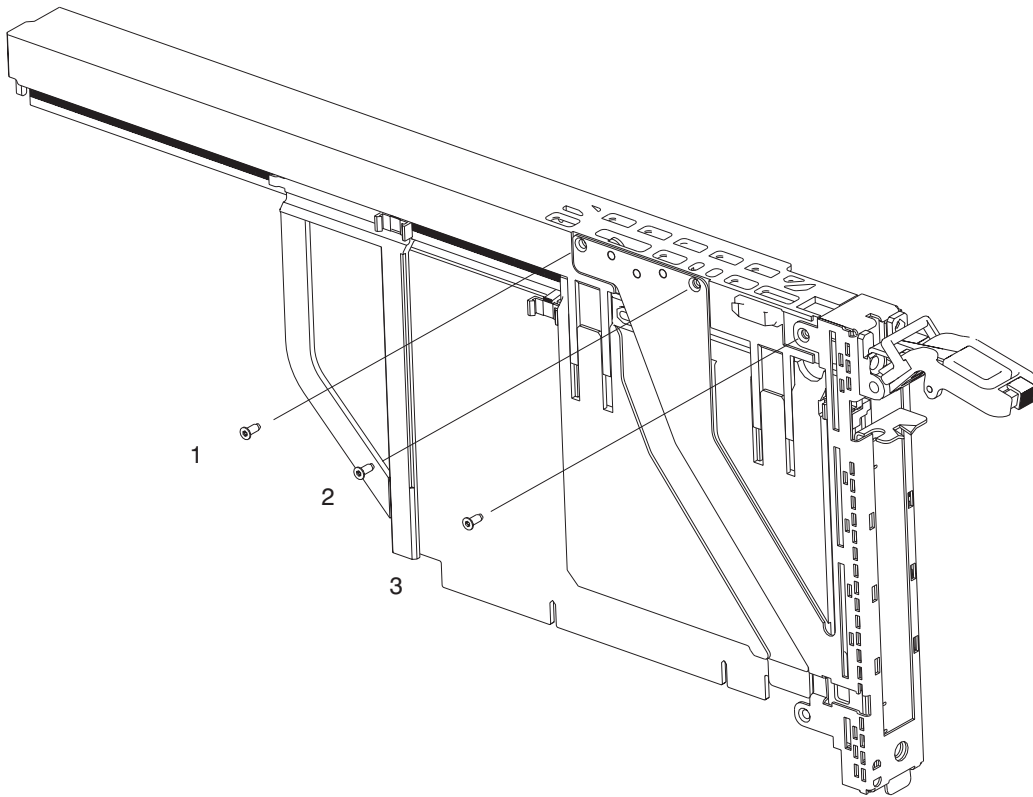
9. With the tailstock to the left on a flat surface, position the cover over the linkage assembly.
10. Tuck the top and bottom tabs at the left of the cover under the bezel.
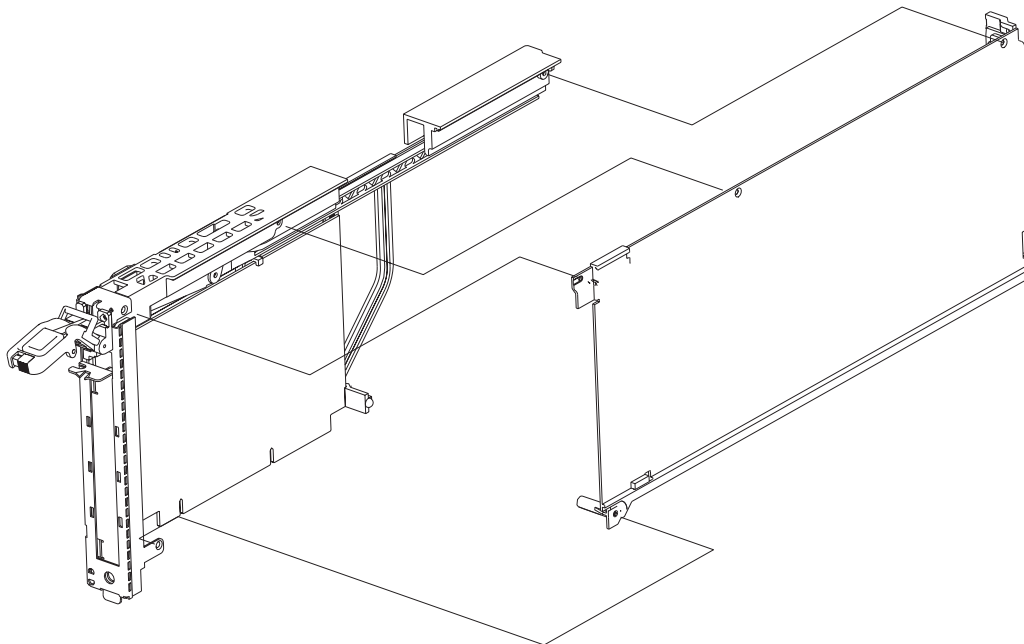
11. Snap the top-right corner of the cover over the guide bump on the linkage assembly.

12. Align the holes at the top of the cover with those in the linkage subassembly, and screw the cover to the linkage subassembly in the sequence shown in the following illustration.
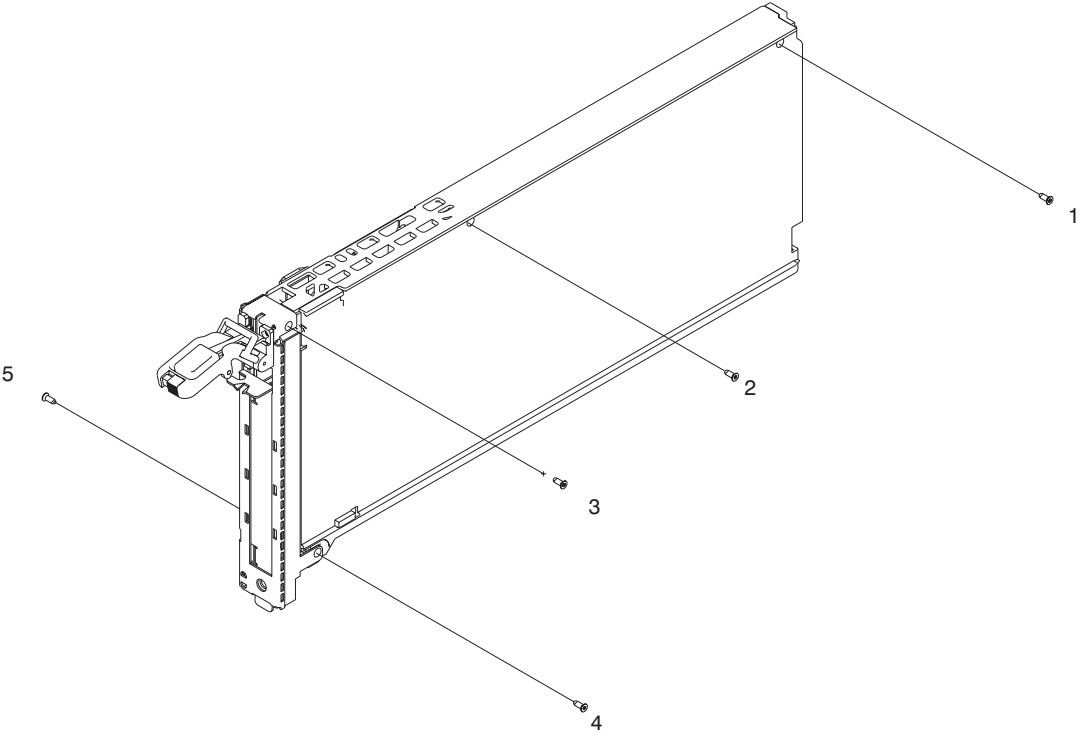
13. Snap the tailstock clip onto the tailstock by rotating it onto the bracket while inside the bezel opening.
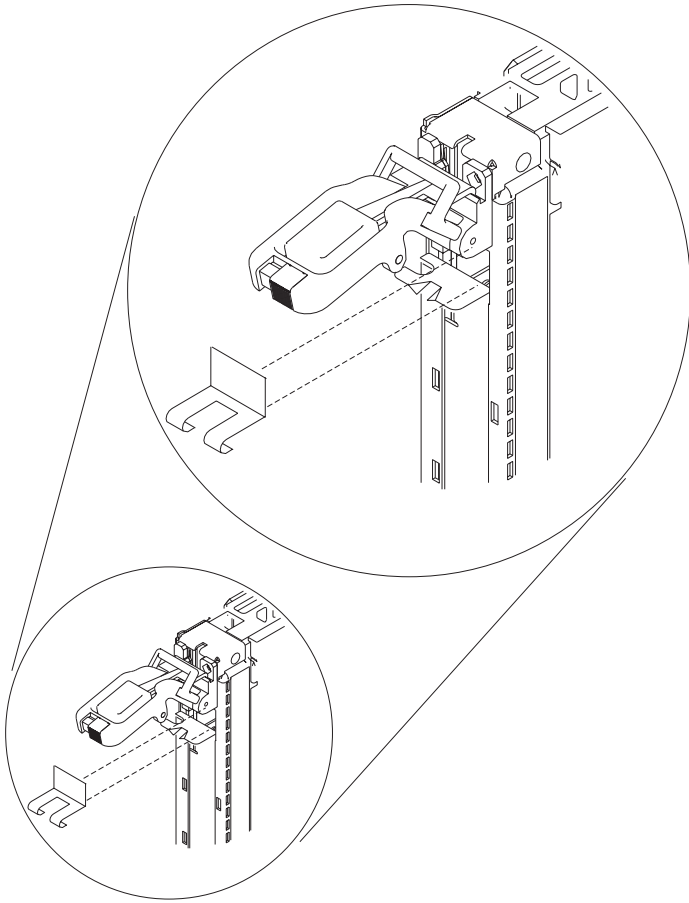
14. Raise the lever to the horizontal extended position and snap the tailstock clip onto the tailstock tab.
15. Visually inspect the assembly and ensure that the following are correct:
    • The card moves up and down correctly when the handle is raised and lowered.
    • The tailstock clip rides within the bezel opening.

I/O Subsystem RIO Riser Card

Removal

Note: The RIO Riser Card is part of the I/O Subsystem Backplane FRU. It cannot be ordered separately.

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. Disconnect all cables from the RIO riser card.
3. Remove the I/O subsystem backplane, as described in "I/O Subsystem I/O Backplane Assembly" on page 893.
4. Remove the two screws that attach the RIO riser card to the I/O subsystem backplane.
5. Carefully pull the card out of the slot as shown in the following illustration.
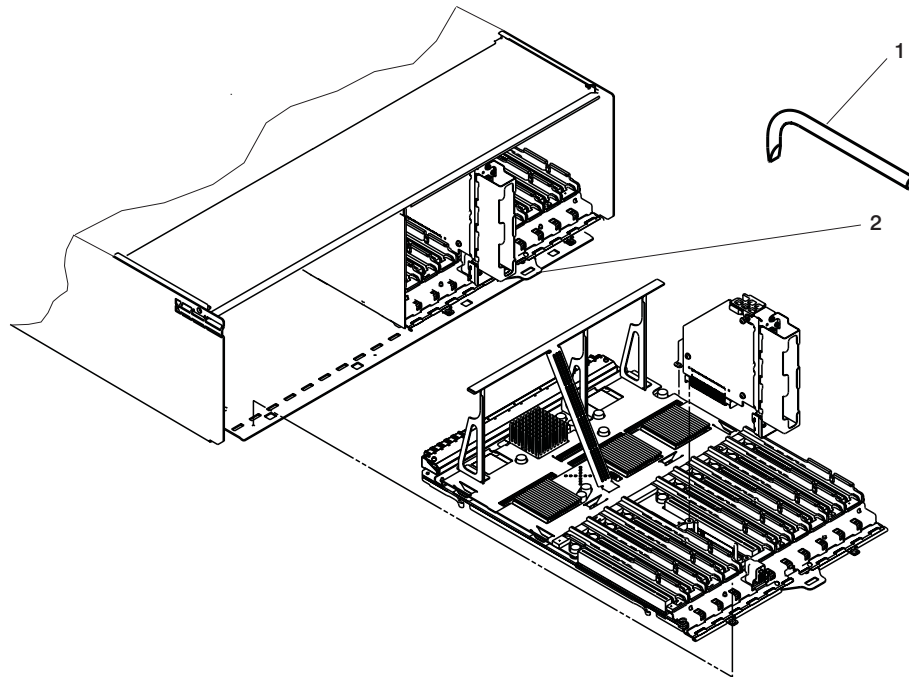
1	Backplane removal tool (part number 11P4789)	**2**	Backplane removal and insertion tab

Replacement
Replace in reverse order.

I/O Subsystem Distributed Converter Assembly (DCA)

Notes:

1. If multiple I/O planars or I/O Drawer DCAs are being replaced during a maintenance window, then they must be replaced one at a time in order to ensure the I/O Drawer serial number does not become damaged. After a single part is replaced, the I/O drawer needs to have power applied to it and the system brought to the OK prompt. At this point, the system can be powered off to replace the next part. An algorithm is used (shortly after the UEPO is turned on) to overwrite the new part. If more than one part is replaced at a time, the VPD will not be updated and the system will not be able to boot in LPAR mode.

2. Each I/O subsystem can have up to two DCAs. You can replace each DCA separately. The removal and replacement procedures are identical for each DCA.

3. This procedure applies to the I/O subsystem DCAs.

4. If a subsystem has two DCAs, each is hot-pluggable. If only one needs to be removed, you do not have to power off the system. Do not attempt to replace two DCAs at once or to move DCAs from one I/O drawer to another to troubleshoot a problem. The machine type/serial number will be damaged when these actions are attempted.

Removal

DANGER

> **Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit.**
> **D02**

1. Locate the DCA to be replaced.
2. Note the state of the DCA's LEDs.
3. Press the green **Start Service** button on the UEPO switch.
4. Proceed only if *all* the DCA's LEDs go off or the repair has been scheduled (System outage - EPO off),
5. Verify the cable labeling and locations, and then unplug the cables from the DCA.
6. Loosen the left and right fasteners, using the torque tool (P/N 6422789), alternating between the fasteners until the unit can slide out of the slot.
7. Grasp both sides of the front DCA, and pull it out of the drawer.

Replacement

1. Carefully slide the DCA into the slot as far as possible (the back edge of the top of the DCA is about .25 inch from the cage bracket).

   Note: Do not force the DCA against the backplane, as this may damage the connector.

2. Hold the upper part of the DCA against the backplane, and use the torque tool to engage the left fastener about two turns into the cage bracket.
3. Repeat the previous step for the right fastener.
4. Alternate tightening the left and right fasteners until both are fully torqued in.
5. Check torque on both fasteners.
6. Plug all cables into their correct location in the DCA.
7. Press the white **Service Complete** button on the UEPO switch.

I/O Subsystem I/O Backplane Assembly

Removal

Note: If multiple I/O planars or I/O Drawer DCAs are being replaced during a maintenance window, then they must be replaced one at a time in order to ensure the I/O Drawer serial number does not become damaged. After a single part is replaced, the I/O drawer needs to have power applied to it and the system brought to the OK prompt. At this point, the system can be powered off to replace the next part. An algorithm is used (shortly after the UEPO is turned on) to overwrite the new part. If more than one part is replaced at a time, the VPD will not be updated and the system will not be able to boot in LPAR mode.

1. Power off the system as described in "Powering Off and Powering On the System" on page 747.
2. Disconnect and label all cables from the adapters on the affected I/O backplane.
3. Remove and label adapters. (See "PCI Adapters" on page 821).
4. Remove the two screws securing the I/O backplane to the subsystem.
5. Insert the I/O subsystem backplane removal tool (part number 44P0549), and pry the tool backward to remove the board from the connector.

   Note: If the I/O subsystem is in the bottom position of the rack, the I/O subsystem may need to be removed from the rack to allow correct usage of the I/O subsystem backplane removal tool to install a new I/O backplane.

6. Slide the I/O subsystem backplane assembly to the rear.

   Note: Be sure to hold the board level to ensure that the board can clear the step in the cover and then again to clear the EMC gasket.

7. Remove the assembly.
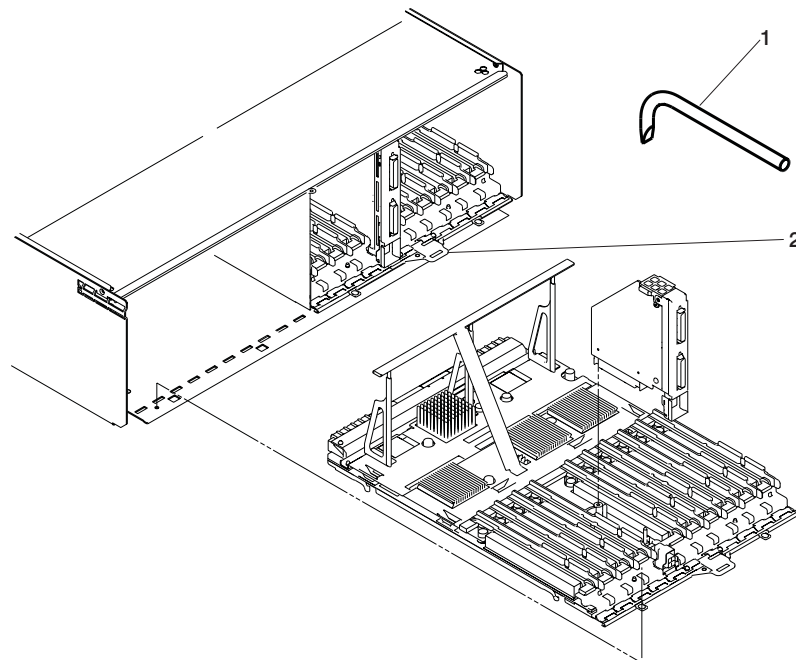
| **1** | Backplane removal tool (part number 11P4789) | **2** | Backplane removal and insertion tab |

Replacement

1. Align the I/O subsystem backplane assembly with the chassis opening and ensure that the roll bar clears the top-edge EMC gasket without damaging it.
2. Slide the I/O subsystem backplane assembly into the chassis. Ensure that the two pins in the chassis align with the bottom of the backplane. Align the backplane with the connector.
3. Continue to slide the backplane in slowly until it makes contact with the connector.
4. Upon contact, insert the insertion tool (part number 11P4789) to cam the backplane into the connector.
5. Pry with the tool until the screw holes on the chassis and the board align.
6. Secure with two screws.
7. Reinstall all adapters and reconnect all cables to the replaced I/O backplane.

I/O Subsystem DASD Hard Disk Drive Assembly

Note: Linux does not support hot-plugging any hot-pluggable PCI adapters or devices. A system with Linux installed on one or more partitions must be shut down and powered off before replacing any PCI adapter or device assigned to a Linux partition. Follow the non-hot-pluggable adapter or device procedures when replacing a PCI adapter or device in any partition with Linux installed.

Removal

1. This procedure is a hot-swap procedure. Refer to the ″"SCSI Hot Swap Manager" in the "Introduction to Tasks and Service Aids"chapter in the *Diagnostic Information for Multiple Bus Systems*, order number SA23-2769. Use the SCSI Hot Swap Manager Task to prepare to remove and replace a SCSI disk drive. Then continue with the following steps.

2. Press on the blue latch to release it from hooking the body.
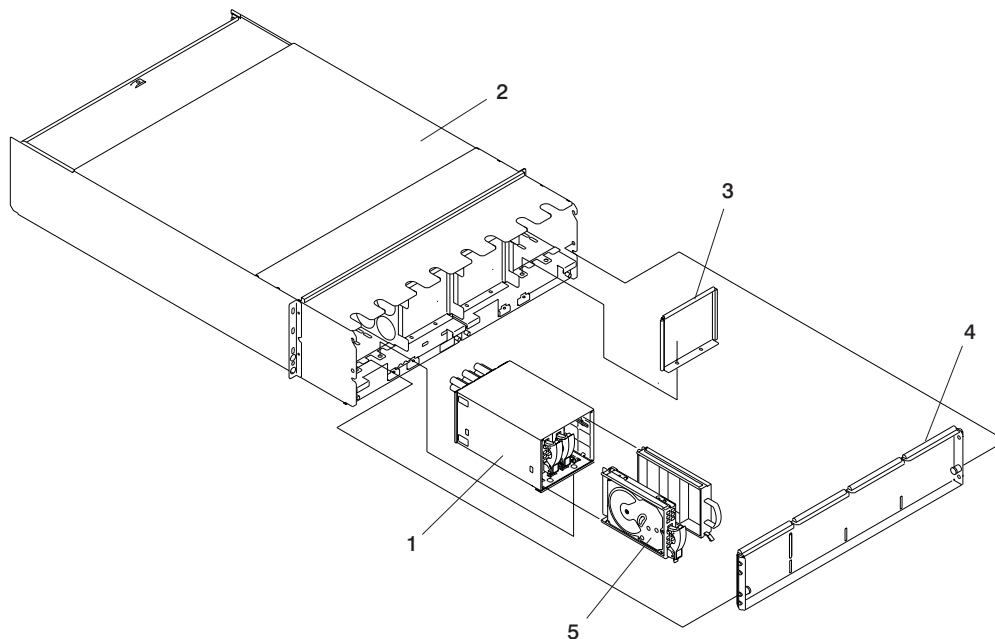
3. Move the black handle all the way down and pull out the assembly. A slight initial resistance is normal.

4. Ensure that the 4-pack has not been damaged. If the DASD assembly was installed incorrectly, the removal could force the metal tab in the 4-pack to bend over the camming slot.

Replacement

Note: All four bays in each DASD 4-pack must be occupied. If a bay does not have a DASD assembly, it must be occupied by a filler assembly.

1. Inspect the DASD 4-pack to ensure it is not damaged.

2. Ensure that the lower retaining screws are inserted and secured.

3. Ensure that the front retaining screws are inserted and secured without interfering with the DCA.

4. Open fully the latch on the DASD assembly by pressing the blue handle and pulling the black handle. A thump signals that it is fully open.

5. With the handle to the bottom, insert the assembly into the appropriate slot.

6. Slide the assembly forward until you feel some resistance. Verify that the spring on the top is contacting the edge of the 4-pack. This should be the only resistance.

7. Push the assembly forward with slightly more force until you feel more resistance. Verify that the tab on the black handle is located above the cam slot in the 4-pack.

> **Note:** If the tab is not aligned with the slot, do not raise the handle. Remove the assembly and start again.

8. Lift the black handle to move the assembly in slightly.
9. Lift the handle and push forward until the blue latch hooks the assembly body.

I/O Subsystem DASD 4-Pack

Removal

1. Press the green **Start Service** button on the UEPO switch.
2. Locate the DASD backplane to be replaced.
3. Turn off the power as described in "Powering Off and Powering On the System" on page 747.
4. Remove the front cover from the I/O subsystem by grasping the pins at either side of the cover, pulling them towards the center of the drawer, and simultaneously lifting the cover up and to the front to release it from the I/O subsystem chassis.
5. Remove the DASD disk drive assemblies or DASD filler(s) from the affected 4-pack as shown in the following illustration.
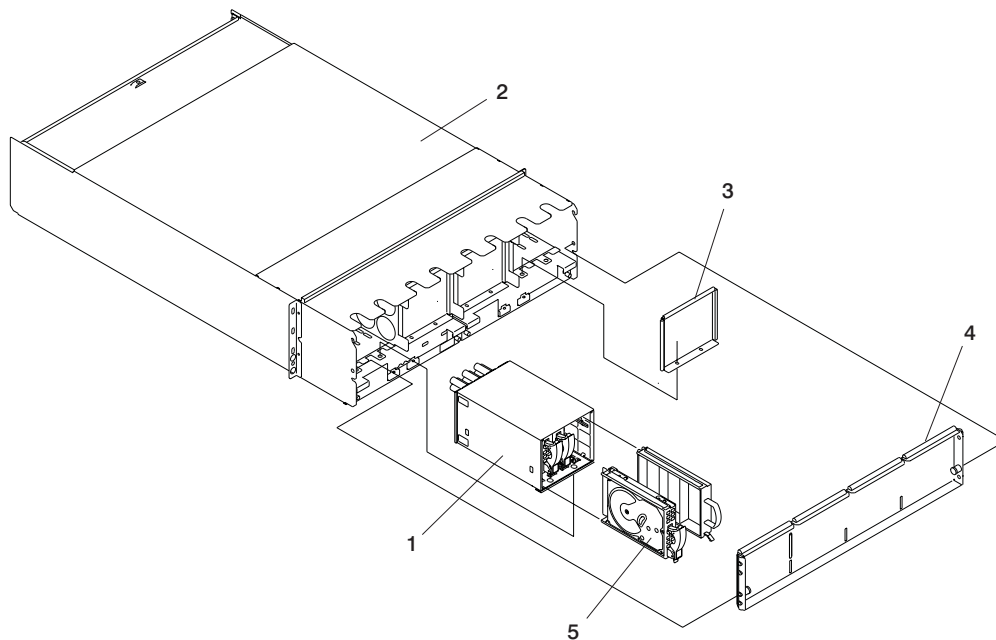
6. Remove two M4x0.7 screws at the lower inside front of the DASD 4-pack with a short-blade screwdriver.
7. Remove two M4x0.7 hex socket-head cap screws at the lower inside rear of the DASD 4-pack.
8. Grasp the DASD 4-pack through the cutouts in the top of the I/O subsystem, and pull the DASD 4-pack out of the front of the I/O subsystem.

Replacement

1. Perform steps 4 through 8 of the removal instructions in reverse order.
2. Turn on the power as described in "Powering Off and Powering On the System" on page 747.
3. Press the white **Service Complete** button on the UEPO switch.

I/O Subsystem Fan

Removal

1. Press the green **Start Service** button on the UEPO switch.
2. Locate the fan to be replaced.
3. Turn off the power as described in "Powering Off and Powering On the System" on page 747.
4. Remove the DASD cage from the front of the fan to be removed (see "I/O Subsystem DASD 4-Pack" on page 897).
5. Slide the black retention latch on the fan assembly upward and, with the handle located on the fan, pull the fan from the front of the I/O subsystem. A door automatically closes when the fan is removed, preventing loss of airflow while the fan is out of the enclosure.
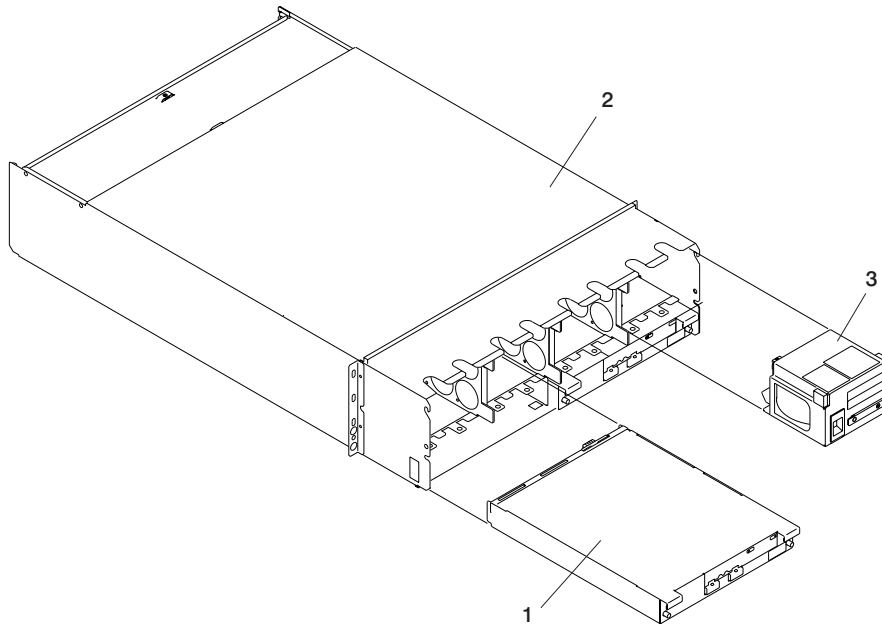
Replacement

Note: All four openings to the front of the fans must be covered either by a DASD 4-pack or by a DASD 4-pack filler.

Replace in reverse order. When you have completed the replacement of the DASD fan, turn on the power as described in "Powering Off and Powering On the System" on page 747, and press the white **Service Complete** button on the UEPO switch. This completes the replacement.

I/O Subsystem Chassis

Removal

Attention: This process requires:

- The use of a lift tool (part number 09P2481) and lift-plate assembly tool (part number 11P4369).
- The lift tool wheels must be chocked to prevent the chassis from moving during the operation. The frame must not be on its casters, the leveling pads must be engaged to prevent the frame from moving during the operation.

1. Read all safety instructions before performing this operation. Unpack lift tool and follow assembly instructions included with the tool. Inspect the tool for damage (do not perform the remove procedure with a damaged lift tool). Replace the blue lift plate with the orange lift plate (P/N 11P4369). Orient two round holes in lift plate to the side of the lift tool that will be closest to the frame.

2. Turn off power as described in "Powering Off and Powering On the System" on page 747.

3. Unplug all power cables from the line power source.

   Attention: Because this procedure is performed with power removed from the system, references to using the white or green service buttons on the UEPO switch do not apply during the remainder of this procedure.

4. Open the rack doors and remove them from the rack.

5. Verify that all cables are labeled. If not, then label all cables and components along with their location at the front and rear of the system.

6. Remove all adapters as described in "PCI Adapters" on page 821.

7. Remove all DASD hard disk drives as described in "I/O Subsystem DASD Hard Disk Drive Assembly" on page 895.

8. Remove the screws that attach the I/O subsystem chassis to the rack.

9. Position the lift tool at the front of the rack. Align the lift tool so that I/O subsystem chassis will not be blocked (at the lip of the orange lift plate) from removal. Install wheel chocks on the lift tool casters. Engage the lift tool brake.

10. Raise the plate to a height such that the lift plate is just below the base of the I/O subsystem chassis you are removing. Release pins on the extender arms and position them on both left and right side. Arms must fit around the frame extenders and lock in place (do not adjust the lift tool after these arms are locked in place).

11. One person should gently pull and guide the I/O subsystem chassis onto the lift plate. The I/O subsystem chassis must be removed far enough to clear the front face of the frame. Retract the extender arms.

12. Lower I/O subsystem chassis to the bottom position of the lift tool.

13. Remove the wheel chocks and release the brake. Flip the crank handle 180 degrees. Carefully move the lift tool with the I/O subsystem chassis to the staging area. The brake and wheel chocks must be in place when transferring the I/O subsystem chassis to or from the packaging material.

Replacement

Notes:

1. If you are replacing this assembly with a new assembly, the manufacturing label with the machine type, model number, and the serial number for the subsystem must be ordered to apply to the new part. For information on replacement labels, see Chapter 10, "Parts Information", on page 905.

2. Before beginning the replacement procedure, install rails in the frame if they are not already installed.

1. Position the lift tool such that the new I/O subsystem chassis can be moved onto the lift plate.

2. Install the wheel chocks and engage the brake.

3. Move the new I/O subsystem chassis onto the tool with its rear (PCI adapter end) flush with the lift plate.

4. Position the lift tool as close as possible to the front of the rack. Install wheel chocks on the lift tool casters. Engage the lift tool brake.

5. Raise the plate to a height such that the lift plate is just above the rails onto which the I/O subsystem chassis will be installed. Release pins on the extender arms and position them on both left and right side. Arms must fit around the frame extenders and lock in place (do not adjust the lift tool after these arms are locked in place).

6. One person should gently push the I/O subsystem chassis toward the frame from the front of the system. Adjust the height of the lift plate, as needed. After the I/O subsystem is installed in the frame, retract extender arms.

7. Lower the lift plate and remove it from the lift tool. Repackage the lift tool.

8. Reinstall all components removed during the removal process by reversing steps 8 through 2 of the removal procedure.

Media Subsystem

CD-ROM, DVD-RAM, or Tape Drive

Attention: DVD-RAM and 4-mm tape drives can be located in the rear of the media subsystem *only if the room is maintained at a nominal room temperature of 24°C (75.2°F).*

**Attention:** Do not open the drive; no user adjustments or serviceable parts are inside.

CAUTION:
All laser modules are designed so that there is never any human access to laser radiation above a class 1 level during normal operation, user maintenance, or prescribed service conditions. Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Only trained service personnel should perform the inspection or repair of optical fiber cable assemblies and receptacles.
`C25, C26`

Removal

1. Ensure that the SCSI drive is in idle mode (the activity light remains off).
2. Loosen the thumbscrew that holds the SCSI drive assembly in the subsystem (the top screw is for the drive to the right, and the bottom screw is for the left drive).
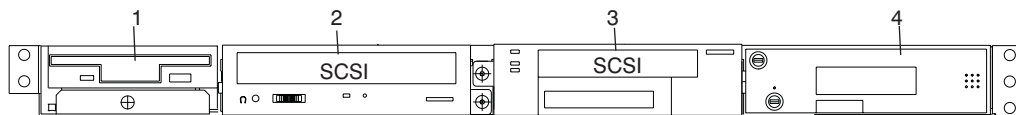
3. Grasping the thumbscrew and not the bezel, carefully pull the drive assembly out until you can access the cables at the rear.

   Attention: When performing the next two steps, always disconnect the power cable *before* disconnecting the SCSI cable.
4. Disconnect the power cable from the rear of the drive assembly.
5. Disconnect the SCSI cable from the rear of the drive assembly.
6. Remove the four mounting screws that hold the drive or blank to the carrier bracket and remove it from the carrier.

Replacement

Note: Ensure that the cables are routed through the grommet at the rear of the carrier.

Attention: When replacing a SCSI drive, always connect the SCSI cable *before* connecting the power cable.

Replace in reverse order.

Diskette Drive

Removal

1. Ensure that the diskette drive is in idle mode (the activity light remains off).
2. Loosen the thumbscrew that attaches the diskette carrier to the media subsystem.
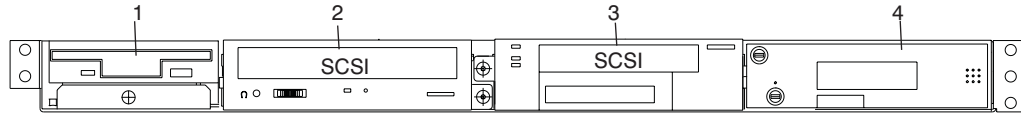
3. Carefully grasping the thumbscrew and not the bezel, pull the drive assembly out until you can access the cables at the rear.

   Attention: When performing the next two steps, always disconnect the power cable *before* disconnecting the diskette signal cable.
4. Disconnect the power cable from the rear of the drive assembly.
5. Disconnect the diskette signal cable from the rear of the drive assembly.
6. Remove the four screws that connect the carrier to the diskette drive.

Replacement
Replace in reverse order.

Attention: When replacing a diskette drive, always connect the diskette signal cable *before* connecting the power cable.

Operator Panel

Removal

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. Remove the upper-left and lower-right screws that hold the media subsystem in the rack, and pull the subsystem out no more that two inches.
3. Pry the spring clip on the left side just enough to release the panel while grasping the operator panel by the top and bottom front (do not pull on the bezel). Pull the operator panel out of the chassis.
4. Note the locations and disconnect the cables from the operator panel, and then remove the operator panel as shown in the following illustration.
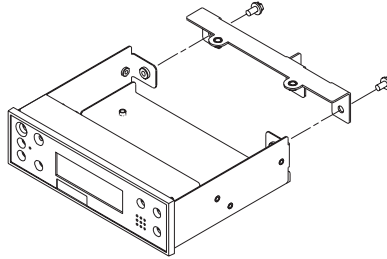
Replacement

1. Remove the VPD module from the old operator panel and insert it in the new operator panel. Make sure you insert the module in the same position as it was in the old panel.
2. Reconnect the cables to the operator panel.
3. Push the operator panel into the chassis until the spring clip engages.
4. Push the chassis into the rack, and replace the two mounting screws.
5. Turn on the power as described in "Powering the System On" on page 748.

Media Subsystem Chassis

Removal

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.
2. Label and disconnect all cables from the rear of the media subsystem.
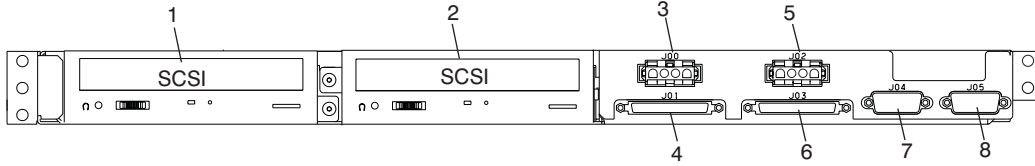
3. Remove the screw that holds the left side of the media subsystem chassis to the rack.
4. Remove the screw that holds the right side of the media subsystem chassis to the rack.
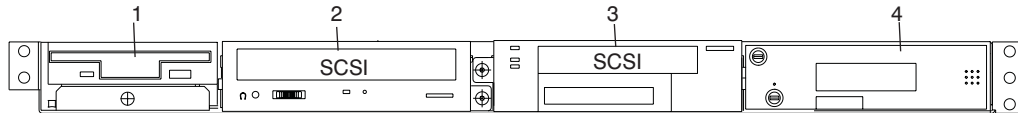
5. Carefully pull the chassis out of the front of the rack.

Replacement

Replace in reverse order.

If the new media drawer contains a new operator panel, remove the VPD module from the old operator panel and insert it in the new operator panel. Make sure you insert the module in the same position as it was in the old panel. Be sure to move any other parts or features from the old media drawer to the new media drawer if they are not included as part of the new media drawer.

Media Subsystem Internal Cables

Removal

1. Turn off power as described in "Powering Off and Powering On the System" on page 747.

2. If you have not already done so, open the front door of the rack unit.

3. Remove the media subsystem from the rack as described in "Media Subsystem Chassis" on page 903, and place it on a work surface.

4. Remove the six screws and the eight 7-mm nuts that hold the cover to the subsystem, as shown in the following illustration.
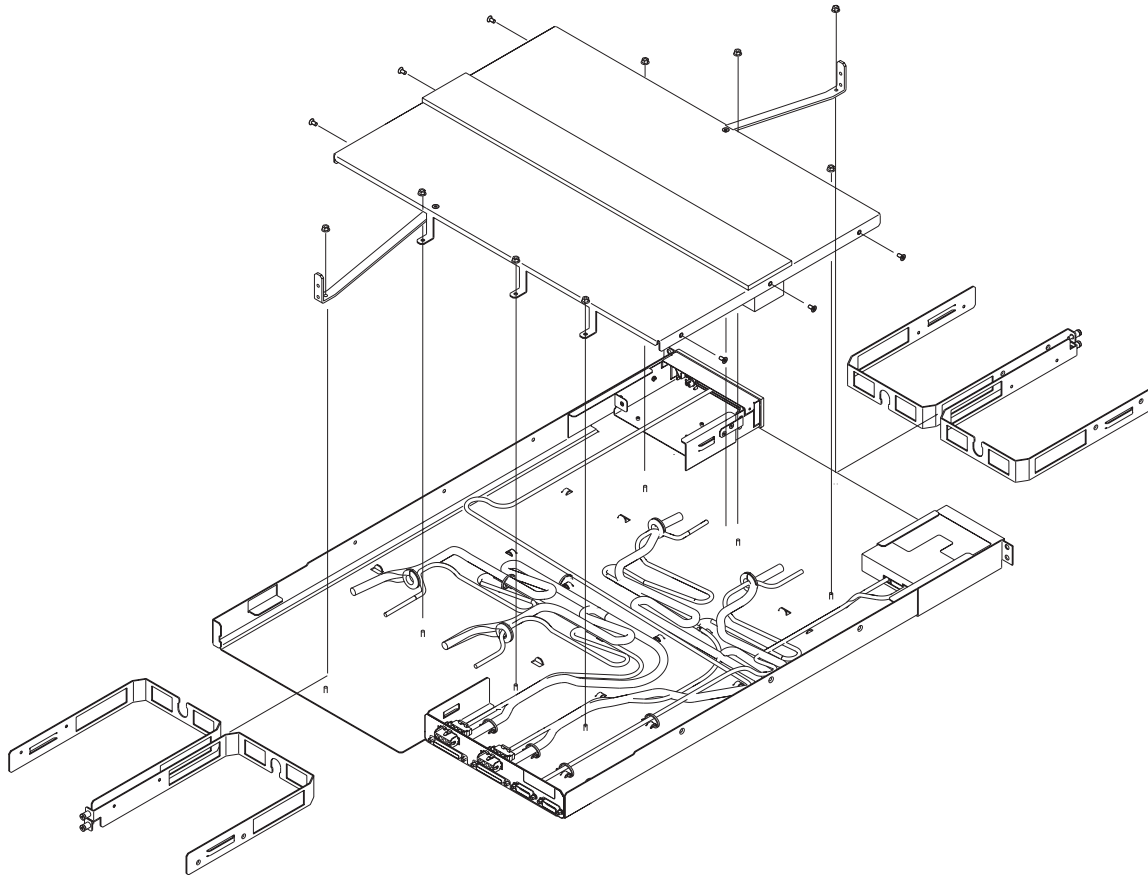
5. Loosen the four captive screws (one for each SCSI drive bay) to free the two truss brackets.

6. Remove the cover.

7. Release the ties that hold the affected cable. If ties must be cut, cut them from the underside of the chassis.

8. Disconnect the cable connector from the chassis.

9. Note the cable routing, and remove the cable from the subsystem chassis.

Replacement

Replace in reverse order.

Note: Be sure to secure the cables with the ties as they were originally installed. Allow enough length for a service loop in case the drives are removed in the future.

Chapter 10. Parts Information

This chapter contains parts information for the 406/70, which includes:

- 406/1R Rack Subsystem
- 406/71 Processor Subsystem
- 406/1D I/O Subsystem

406/1R Rack Subsystem

The rack subsystem consists of the rack, power subsystem, and the integrated battery feature.
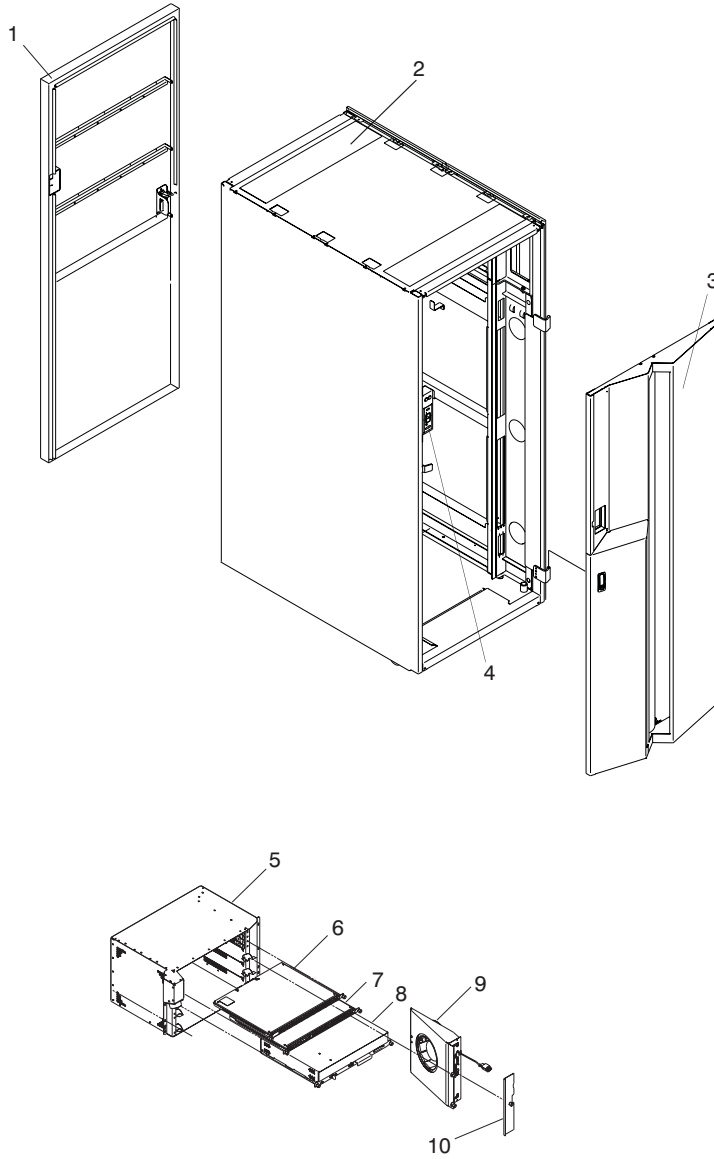
11 - Integrated Battery Feature (not pictured)

Index	Part Number	Units Per Assembly	Description
1	44P0107	1	Rear Door
	44P0127		Rear Door (Accoustic)
2	11P3948	1	42U Frame
	44P0125	1	Cover, side left
	44P0126	1	Cover, side, right
	11P2890	1	Top hat
	11P2923	2	Shipping bar
3	44P0426	1	Front Door Primary Rack
	44P0434		Front Door Secondary Rack
	11P1097	1	Front Latch Primary Rack
	11P1096		Front Latch Secondary Rack
	11P1093	2	Latch Bracket
	44P1152	1	Vertical Extender Latch Side
	44P1153	1	Extender Bottom Front
	44P1154	1	Extender Bottom Rear
	11P4106	2	Door Hinge
	11P3990	1	Door key
	54G2882	12	Screw
	11P3535	2	Hinge
	2665525		Bolt
4	44P1124	1	Universal Emergency Power Off (UEPO) Switch
5	44P1958	2	Bulk Power Enclosure (BPE)
6	44P1959	2	Bulk Power Distribution (BPD)
7	11P3645	2	Bulk Power Controller (BPC)
	11P1597		Y-Cable (CSP)
8	44P1995	2	Bulk Power Regulator (BPR)
9	11P1787	2	Bulk Power Fan (BPF)
	11J5335	2	Bulk Power Assembly Rail
10	11P0287	1	Fan Cover Plate
11	11P3732	Up to 2	Integrated Battery Feature (IBF)
	44P2471	1	Capacity card for power subsystem

406/71 Processor Subsystem (Front)

This processor subsystem front view consists of the processor chassis, memory books, fans, and filters.
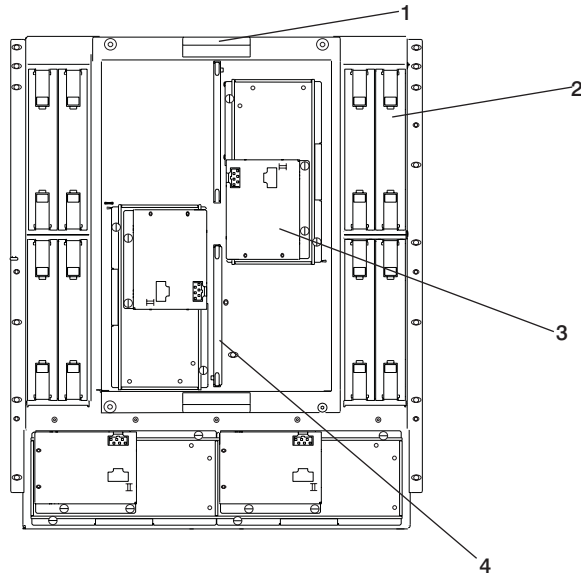
Index	Part Number	Units Per Assembly	Description
1	11P4518	1	Processor subsystem chassis (with backplane)
2	11P2935	1 to 4	Memory book retainer See "406/71 Processor Subsystem (Front)" on page 910 for Memory books part numbers.
3	31L7627	4	Fan Controller (MDA)
	07H5349	4	Fans
4	11P3781	2	Air filter

406/71 Processor Subsystem (Front)

This processor subsystem front view consists of the memory books, MCM and L3 modules.

Index	Part Number	CCIN	Units Per Assembly	Description
1	44P1282	28AD	1	System Backplane
2	NA			Protective Cover (Included as part of the L3 Cache Module FRU.) **Note:** Do not discard the protective cover. Use it when returning L3 FRUs.
3	09P3218	25D9	4 to 8	128 MB (4x32)/400 MHz L3 Cache kit Includes: • PN 21P7972 400 MHz VPD card (CCIN 25D9) • PN 11P3873 L3 Cache Module • PN 04N6923 Brush • PN 11P4055 Label • PN 44P0360 Mech Spring Kit
4	21P4589			Load Post Sleeve
5	11P2788			Rear Spring Plate
6	11P2785			Front Spring Plate with Set Screw
7	00P4668	272D	Up to 3	MCM Passthru Module
8	21P7271	27C1	1	Clock Card
9	00P2830	25D7, 25D8	1	1.1 GHz 4-way MCM with VPD card kit Includes: • PN 3.2 STND MCM Module (and VPD Smart Card, CCIN 25D7 or 25D8) • PN 04N6923 Brush • PN 11P3876 Screw • PN 11P4914 Label
	09P5629	25D5	1 to 2	1.1 GHz 8-way MCM with VPD card kit Includes: • PN 11P4952 3.2 STND MCM Module (and VPD Smart Card, CCIN 25D5) • PN 04N6923 Brush • PN 11P3876 Screw • PN 11P4055 Label
	00P4688	258A 25F9 269A	1 to 4	1.5 GHz 4-way processor with L3 kit Includes: • PN 00P5159 VPD card • PN 00P6346 500 MHz L3 Cache • PN 04N6923 Brush • PN 11P3867 Screw • PN 11P4055 Label • PN 00P4668 Pass Through
	53P6170	527C	1	CUoD 1.1 GHz Processor MCM Capacity Card
10	11P2793		Up to 12	L3 Filler
11	53P5603 53P5604 53P5606 53P5608	305C 302A 305E 302C	1 to 4	4 GB Memory Book I 8 GB Memory Book I 16 GB Memory Book I 32 GB Memory Book I
12	53P4252 53P4259 53P4266	307D 307E	1 to 4	16 GB Memory Book I, 567 MHz 32 GB Memory Book I, 567 MHz 64 GB Memory Book I, 567 MHz

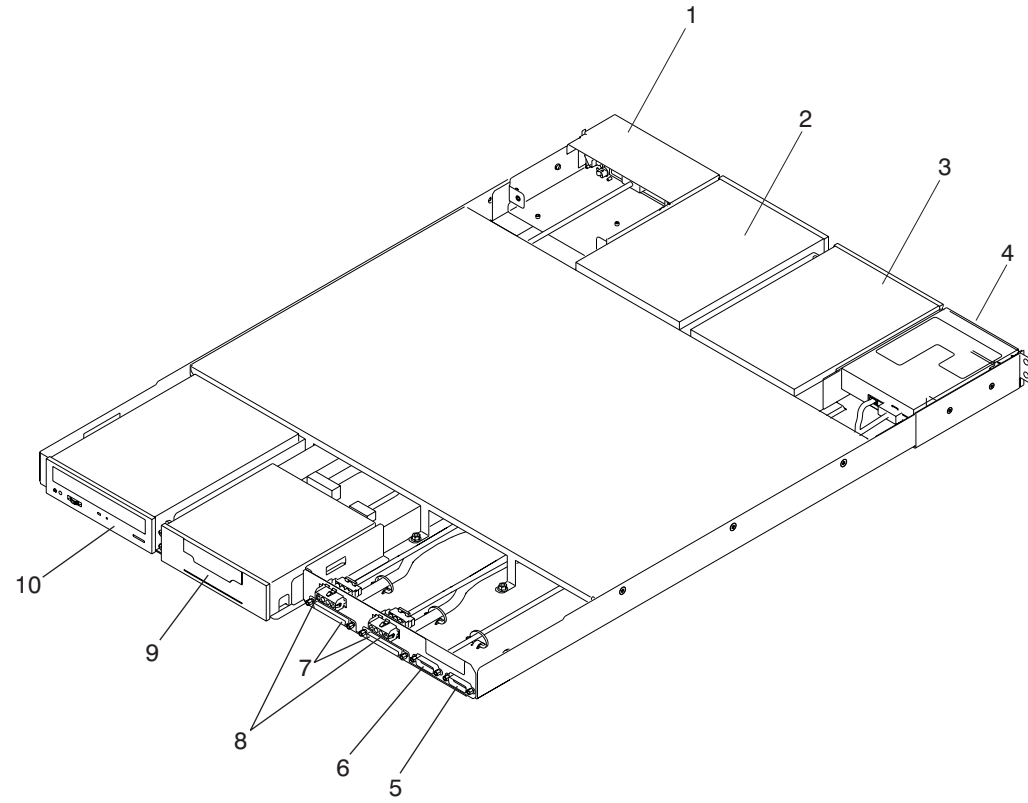| Index	Part Number	CCIN	Units Per Assembly	Description
13	53P4254	30BD		CUoD 8/16 GB Memory Book I
	53P4261	30C6		CUoD 16/32 GB Memory Book I
		30C1		
		30CA		

406/71 Processor Subsystem (Rear)

This processor subsystem rear view consists of the RIO books, DCAs, and capacitor books, MCM and L3 modules, as well as the media subsystem.
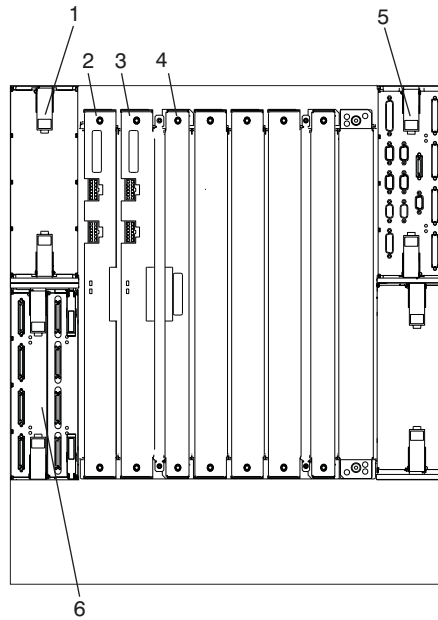
Index	Part Number	CCIN	Units Per Assembly	Description
1	53P1573 11P2936	2738	1	Fourth I/O book I/O book retainer
	09P3462	273D	1	Primary I/O book with RIO-G ports
	53P4554	2806	1	Secondary I/O book with RIO-G ports
2	44P3024 11P1543 11P1544		1 1 1	Distributed converter assembly DCA1 Cable assembly (DCA1) P00 Cable assembly (DCA1) P01
				Attention: Do not plug DCA PN 11P4741 into the U1.18-P1-V1 location.
3	44P3024 11P1545 11P1546		1 1 1	Distributed Converter Assembly DCA2 Cable assembly (DCA2) P00 Cable assembly (DCA2) P01
				Attention: Do not plug DCA PN 11P4741 into the U1.18-P1-V2 location.
4	11P1540		1	Capacitor card
5	44P3024 11P1547 11P1548		1 1 1	Distributed converter assembly DCA3 Cable assembly (DCA3) P00 Cable assembly (DCA3) P01
				Attention: DCA PN 11P4741 can be plugged into U1.18-P1-V4 (DCA3) location.
6	09P5687 11P2936		1	Primary I/O book I/O book retainer
	16G8095		1	TOD Battery (inside primary I/O book)
	44P0206 31L7196			9-9 pin serial cable connects the managed system primary I/O book to the HMC 9-25 pin serial cable connects the managed system primary I/O book to HMC async adapter
7	53P1573 11P2936	2738	1	Secondary I/O book I/O book retainer

406/71 Media Subsystem

Index	Part Number	Units Per Assembly	Description
1	24L1089 05G2882	1	Operator Panel Screw
2	See Note	1	Optional Media Device (SCSI Drive)
3	See Note	1 or 2	CD-ROM Drive (SCSI Drive)
4	76H4091	1	Diskette Drive
5	44P1799	1	Operator panel cable (J05)
6	44P1800 5420242	1	Diskette Drive Signal Cable (J04) Cable Tie
7	11P4215 5420242	2	Media Device SCSI Cables from J01 to rear drives, J03 to front drives Cable Tie
8	11P4214 5420242	2	Media Device Power Cables (J00 to rear drives, J02 to front drives) Cable Tie
9	See Note	1	Optional Media Device (SCSI Drive)
10	See Note	1	Optional Media Device (SCSI Drive)
	44P2566	Up to 3	Media Bay Cover
	44P1055		Cassette
	97P2686	1	Ultra320 SCSI
	44P1055	1	Ultra320 SCSI cassette
	44P0239	1	BSM
Note: See *Diagnostic Information for Multiple Bus Systems* for part numbers.			

Power and SCSI Cables to the Media Subsystem
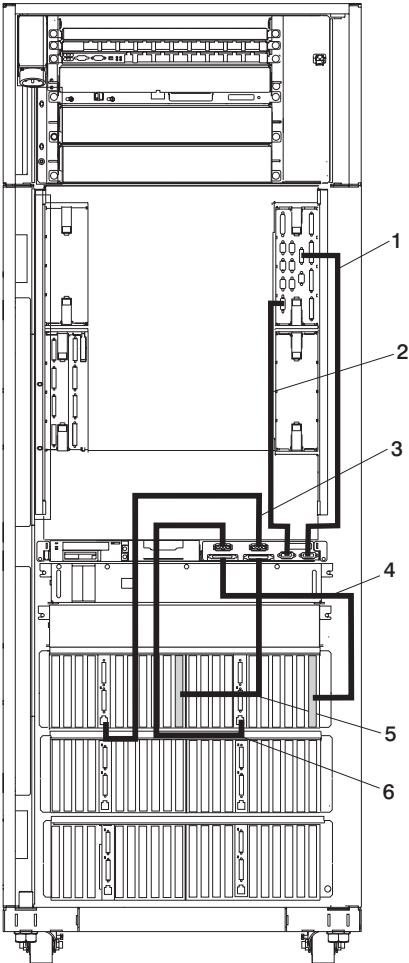
Index	Part Number	Units Per Assembly	Description
1	11P4301	1	Cable Connecting the Operator Panel to the Media Subsystem
2	11P4300	1	Cable Connecting the Diskette Drive to the Media Subsystem
3	11P2352	1	Power Cable for Media Subsystem Front Components
4	11P4303	1	SCSI Cable for Media Subsystem Rear Components
5	11P4303	1	SCSI Cable for Media Subsystem Front Components
6	11P2351	1	Power Cable for Media Subsystem Rear Components

406/1D I/O Subsystem

The system can contain up to three I/O subsystems. This section lists detail for one I/O subsystem. Depending on your configuration, the quantities of parts listed may increase by the actual number of I/O subsystems in your system.

Front
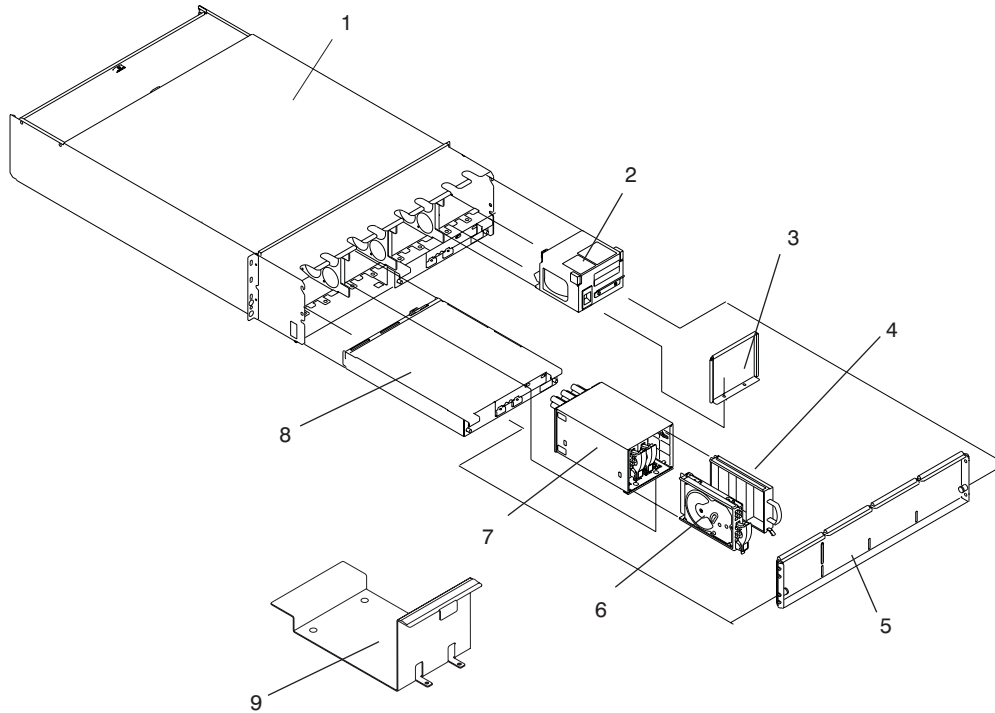
Index	Part Number	Units Per Assembly	Description
1	44P0705	1	I/O Subsystem Chassis
	07H5247	2	Frame Rail
2	11P4624	1 to 4	Fan assembly
3	44P1277	1 to 4	DASD 4-Pack Filler
4	11P3662	Up to 15	DASD Filler
5	44P0189	1	Front Cover
6	See Note	1 to 16	SCSI DASD Disk Drives
7	11P4855	4	DASD-4 Pack Cage/Backplane Assembly
	11P2436		Screw - used on the DASD backplane assembly
	11P3457		Screw
8	11P3582	2	DCA
9	44P1277	1	Half I/O drawer filler plate
Note: See *Diagnostic Information for Multiple Bus Systems* for part numbers.			

Rear
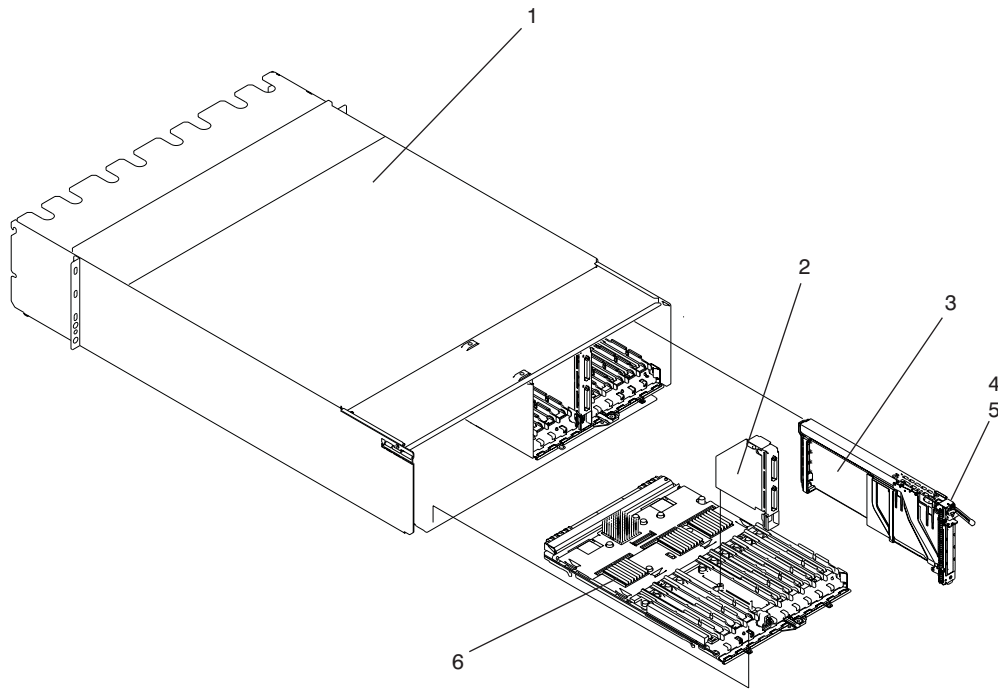
Index	Part Number	Units Per Assembly	Description
1	44P0705	1	PCI I/O Subsystem Chassis
2	NA	2	RIO Riser Card, part of the I/O subsystem backplane assembly
3	See note	1 to 20	PCI Adapter Card Assembly
	11P4089	1 to 20	PCI Filler Book
4	44P1055	1 to 20	Blind-swap cassette, for standard PCI adapter
	44P1390	As needed	Blind-swap cassette, for two-adapter-wide PCI adapter
	44P3320	As needed	Blind-swap cassette, for Gigabit Ethernet PCI adapter
			Adapter clip, used with blind-swap cassette:
	44P0323	As needed	for Gigabit Ethernet FC 2969 type 9U
	44P0324	As needed	for Ultra3 SCSI FC 6203 Type 4Y
	44P0321	As needed	for 10/100 BaseT Ethernet FC 4962 Type AF
	44P0406	As needed	for Gigabit Fibre Channel PCI FC 6228 Type 4W
5	11P4861	1 to 20	PCI filler, for slots with no adapter
6	44P1414	1 to 2	PCI I/O Backplane
Note: See *Diagnostic Information for Multiple Bus Systems* for part numbers.			

Power Cabling
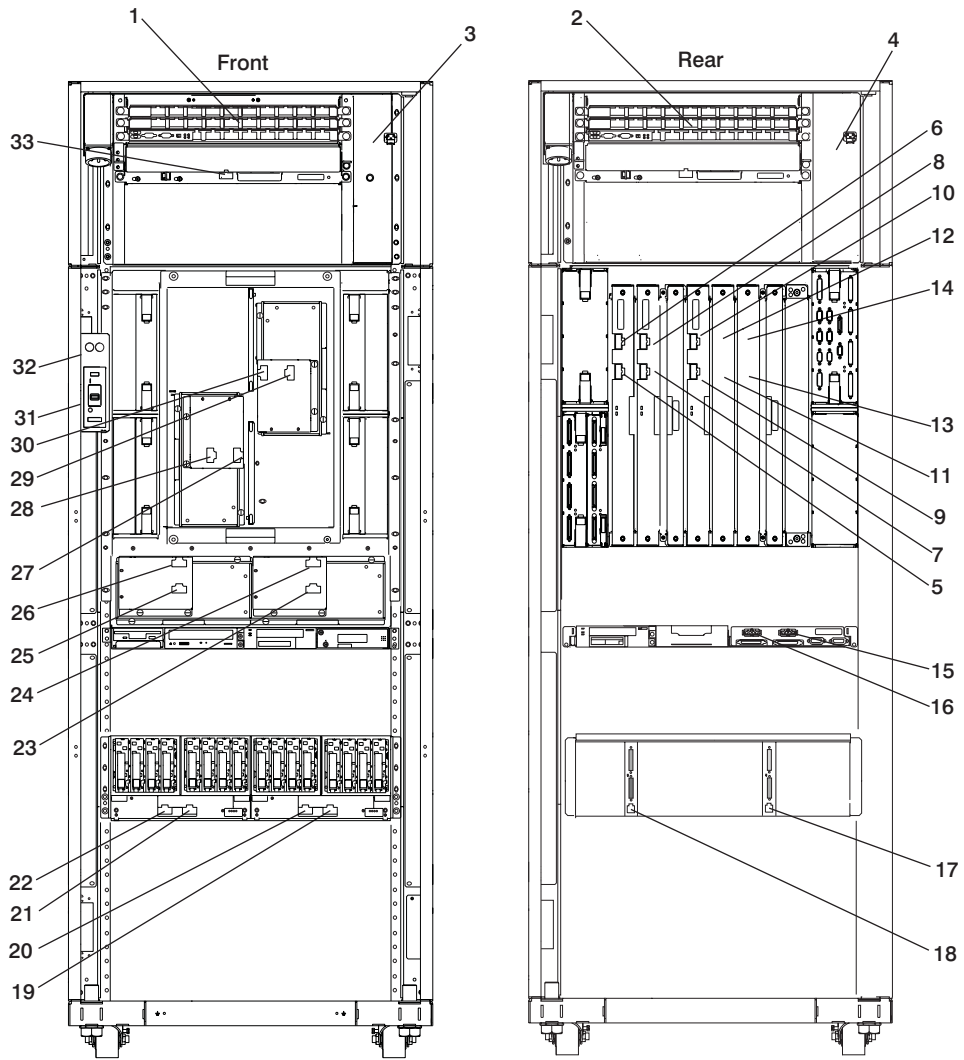
Index	Part Number	Units Per Assembly	Description
1	NA 11P1598		Bulk Power Distribution on the A side of the system (BPD A Side) Cable A35-BPC-P00 to B35-BPC-P00
2	NA 11P1598		Bulk Power Distribution on the B side of the system (BPD B Side) Cable B35-BPC-P00 to A35-BPC-P00
3	NA	1	A35-BPC-P03 to Bulk Power Fan P1-F1, Cable attached to FAN (BPF-A)
4	NA	1	B35-BPC-P03 to Bulk Power Fan P2-F1, Cable attached to FAN (BPF-B)
5	11P4449	1	B35-BPC-P08 to DCA-1-P01, Red
6	11P4448	1	A35-BPC-P08 to DCA-1-P00, Red with white stripe
7	11P4451	1	B35-BPC-P09 to DCA-2-P01, Red
8	11P4450	1	A35-BPC-P09 to DCA-2-P00, Red with white stripe
9	11P4453	1	B35-BPC-P10 to DCA-3-P01, Red
10	11P4452	1	A35-BPC-P10 to DCA-3-P00, Red with white stripe
11			Unused
12			Unused
13			Unused
14			Unused
15 to 17	11P4734	1	I/OB9-P00 to Media P02
16 to 18	11P4735	1	I/OB9-P01 to Media P00
19, 20, 21, 22	NA		B35-BPDx-P0x to I/O Subsystem #x "RIO Cables and I/O Power Cables" on page 923
23	11P4462	1	B35-BPC-P05 to (AMD2-P01) MDA2-J02, Red
24	11P4461	1	A35-BPC-P05 to (AMD2-P00) MDA2-J01, Red with white stripe
25	11P4460	1	B35-BPC-P04 to (AMD1-P01) MDA1-J02, Red
26	11P4459	1	A35-BPC-P04 to (AMD1-P00) MDA1-J01, Red with white stripe
27	11P4463	1	A35-BPC-P06 to (AMD3-P00) MDA3-J01, Red with white stripe
28	11P4464	1	B35-BPC-P06 to (AMD3-P01) MDA3-J02, Red
29	11P4466	1	A35-BPC-P07 to (AMD4-P01) MDA4-J02, Red
30	11P4465	1	B35-BPC-P07 to (AMD4-P00) MDA4-J01, Red with white stripe
31	11P1596	1	B35-BPC-P02 to UEPO J01, Red
32	11P1595	1	A35-BPC-P02 to UEPO J00, Red with white stripe
33	05N6740	1	A35-BPR-P00 to A13-IBF1-P00 B35-BPR-P00 to B13-IBF2-P00

RIO Cables and I/O Power Cables

Index Number	FRU Part Number	Units Per Assembly	Description
	11P2355	1	RIO cable 0.5-meter, per drawer
	11P0272	Up to 2	RIO cable 2-meter, per drawer
	44H9137	Up to 2	RIO cable 15-meter, per drawer
	00P5238	Up to 2	RIO-2 cable 1.75-meter
	00P5239	Up to 2	RIO-2 cable 2.5-meter
	21P5477	Up to 2	RIO to RIO-2 cable 6-meter, per drawer
	53P5242	1	RIO to RIO-2 cable 1-meter, per drawer
	53P5243	Up to 2	RIO to RIO-2 cable 3-meter, per drawer
	53P5454	1	RIO-2 to RIO-2 cable 1-meter, per drawer
	53P2675	Up to 2	RIO-2 to RIO-2 cable 8-meter, per drawer
	53P2676	Up to 2	RIO-2 to RIO-2 cable 3.5-meter, per drawer
	11P4490	1	I/O Subsystem 1 power cable (DCA1-P01)
	11P4491	1	I/O Subsystem 1 power cable (DCA1-P00)
	11P4492	1	I/O Subsystem 1 power cable (DCA2-P01)
	11P4493	1	I/O Subsystem 1 power cable (DCA2-P00)
	11P4494	1	I/O Subsystem 2 power cable (DCA1-P01)
	11P4495	1	I/O Subsystem 2 power cable (DCA1-P00)
	11P4496	1	I/O Subsystem 2 power cable (DCA2-P01)
	11P4497	1	I/O Subsystem 2 power cable (DCA2-P00)
	11P4498	1	I/O Subsystem 3 power cable (DCA1-P01)
	11P4499	1	I/O Subsystem 3 power cable (DCA1-P00)
	11P4500	1	I/O Subsystem 3 power cable (DCA2-P01)
	11P4501	1	I/O Subsystem 3 power cable (DCA2-P00)

Keyboards and Mouse
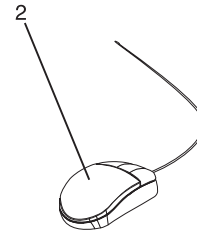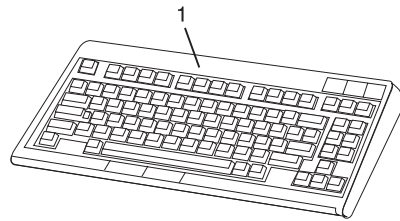
Index Number	FRU Part Number	Units Per Assembly	Description
1	24P0440	1	Keyboard, 101 US English (ID 103P) USB
	24P0450	1	Keyboard, 101 French (ID 189) USB
	24P0458	1	Keyboard, 101 Italian (ID 142) USB
	24P0453	1	Keyboard, 101 German/Austrian (ID 129) USB
	24P0476	1	Keyboard, 101 UK English (ID 166) USB
	24P0470	1	Keyboard, 101 Spanish (ID 172) USB
	24P0459	1	Keyboard, 101 Japanese (ID 194) USB
	24P0444	1	Keyboard, 101 Brazilian Portuguese (ID 275) USB
	24P0431	1	Keyboard, 101 Swedish, Finnish (ID 153) USB
	24P0471	1	Keyboard, 101 LA Spanish (ID 171) USB
		1	Keyboard, 101 Korean (ID 413) USB
	24P0446	1	Keyboard, 101 Chinese (ID 467) USB
	24P0466	1	Keyboard, 101 Russian (ID 443) USB
2	09N5532	1	Three Button Mouse (USB) 8841

System Power Cables

Index Number	FRU Part Number	Units Per Assembly	Description
1	11P0916	2	Line Power Cord, US, Canada, Japan, 30 AMP 480 V ac
1	11P0367	2	Line Power Cord, US, Canada, Japan, 60 AMP 240 V ac
1	11P0914	2	Line Power Cord, US, Chicago, 30 AMP 480 V ac
1	11P0365	2	Line Power Cord, US, Chicago, 60 AMP 240 V ac
1	11P0918	2	World Trade Power Cord, 4.27m (14 ft.), 8AWG, high voltage

Tools

The following tools are needed to perform service actions on the 406/70. These tools can be ordered through your normal tools supplier.

Index	Part Number	Units Per Assembly	Description
1	46H9635	1	Tool box
2	11P4486	1	Torque tool MCM
3	04N6923	1	Sash brush
4	11P4747	1	Magnifying glass
5	11P4654	1	L3 cache tray
6	44P0549	1	I/O backplane insertion/removal tool
7	6422789	1	DCA removal tool
8	31L8313	1	Leveling tool (for rack)
9	47H0182	1	Torx, T10 (this tool might not be available in the shipped tool kit. A T10 tip used with a replacable driver handle can be substituted)
10	11P4861	1	Blank cassette
11	11P3990	1	Door key
12	44P0182	1	DASD service tool
13	11P4914	1	MCM/L3/Pass-through plug-location map (tri-fold chart) should be installed in the primary rack
14	11P4055	NA	Plug count adhesive replacement label
15	44P0209	1	Test card asm, MCM/L3 Short-To-GND
	11P4732 11P4734 11P4735	1	Cabe asm Cabe asm Cabe asm
16	00P7023	NA	Vacuum cleaner (110 Vac)
	36P2435 36P2436 36P2437	NA	Vacuum cleaner (220 Vac) OMEGA FILTER 0.3 MICRON CORD OMEGA UK PLUG
17	07H6824	12	Bracket, insert
18	07H6823	2	Bracket, 11 x 6 insert
19	11P1262	4	Bracket, asm w/ foam
20	07H6827	4	Blank filler plate - 3
21	07H6826	3	Blank filler plate - 1
22	54G2882	16	Screws
23	31L7174	1	Hook-and-loop fastener (roll)
24	08J5557	1	Wheel chocks
25	44P0144		Tailgate assembly
26	44P4107	1	Shorts Tester
27	00P5758	1	PCI short adapter

Appendix A. Environmental Notices

Product Recycling and Disposal

Components of the system unit, such as structural parts and circuit boards, can be recycled where recycling facilities exist. Companies are available to disassemble, reutilize, recycle, or dispose of electronic products. Contact your account representative for more information. This system unit contains parts such as circuit boards, cables, electromagnetic compatibility gaskets and connectors which may contain lead and copper/beryllium alloys that require special handling and disposal at end of life. Before this unit is disposed, these materials must be removed and recycled or discarded according to applicable regulations. This book contains specific information on each battery type where applicable. This product may contain a sealed lead acid battery(s) or nickel-cadmium battery(s). The battery(s) must be recycled or disposed of properly. Recycling facilities may not be available in your area.

For information on reuse, recycling or proper battery disposal procedures, contact your sales representative or local waste disposal facility.

Acoustical Noise Emissions

The equivalent continuous A-weighted sound pressure level at workstations (emission sound pressure level at the 1-meter bystander positions) does not exceed 70 dB(A).

Der Geräuschpegel der Einheit ist kleiner oder gleich 70 db(A).

Declared Acoustical Noise Emissions

Product Configuration	Acoustical Characteristic			
	Declared A-Weighted Sound Power Level, L_{WAd} (B)		Declared A-Weighted Sound Pressure Level, LpAm (dB)	
	Operating	Idle	Operating	Idle
Processor Subsystem	6.1^5	6.1^5	44^6	44^6

Notes:

1. Noise levels cited are for the typical configuration (A-Frame: Bulk Power, CEC cage, battery option, media drawer, and two I/O drawers).

2. The 0.6-B (6-dB) reduction in noise emission levels with the acoustical rear door corresponds to a factor of 4 reduction. That is, the noise level of a single A-Frame with Slimline covers is about the same as the noise level of four A-Frames with acoustical covers.

3. L_{WAd} is the upper-limit A-weighted sound power level; LpAm is the mean A-weighted sound pressure level at the 1-meter bystander positions; 1 B = 10 dB.

4. All measurements made in conformance with ISO 7779 and declared in conformance with ISO 9296.

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

The manufacturer may not offer the products, services, or features discussed in this document in other countries. Consult the manufacturer's representative for information on the products and services currently available in your area. Any reference to the manufacturer's product, program, or service is not intended to state or imply that only that product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any intellectual property right of the manufacturer may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any product, program, or service.

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Appendix C. Service Processor Setup and Test

Attention: This procedure applies to modems attached to the serial ports (S1 and S2) on the primary I/O book (location U1.18-P1-H2). It does not affect the operation of the modem attached to the Hardware Management Console (HMC).

The call-out function is normally handled by the Service Focal Point application running on the HMC.

Note: The call-out and surveillance options are disabled in partitioned systems.

For your convenience, an example of a basic service processor setup checklist is included here. Your setup may include more or fewer of the available features, so you can adjust this checklist for your own application.

Service Processor Setup Checklist

1. Shut down the managed system, and wait for the OK in the physical operator panel.
2. Open a virtual terminal window on the HMC.
3. Start the service processor menus.
4. Set the system name.
5. Enable Surveillance.
6. Configure call-in/call-out.
7. Attach modems if necessary. If modem attachment is not necessary, proceed to step 8. To attach a modem, do the following:
    a. Exit the service processor menus.
    b. Disable the 350 V dc outputs from the Bulk Power Assembly (BPA) by placing the UEPO switch in the *off* position.

       Attention: With the UEPO *off*, power is still present within the BPA.
    c. Attach the cables and modems.
    d. Place the UEPO switch in the *on* position.
8. Test both of the following:
    - Call-In, go to "Testing Call-In" on page 932
    - Call-Out, go to "Testing Call-Out" on page 932

Your service processor is now ready for use.

Testing the Service Processor Setup

This section contains sample testing procedures to help ensure your service processor setup is working.

These tests include communicating with the server operating system. Before you start, ensure that the necessary serial port(s) is configured. If you need assistance, refer to "Serial Port Configuration".

The server should be powered off as a result of the "Service Processor Setup Checklist" on page 931.

Testing Call-In

1. At your remote terminal, call in to your server. Your server answers and offers you the service processor Main Menu after requesting your privileged-access password.
2. Select **System Power Control**.
3. Select **Power-On System**.

   When you are asked if you wish to continue powering on the system, type Y.
4. After the system firmware and operating system have initialized the server, the login prompt displays at your remote terminal if you set up seamless modem transfer. This may take several minutes. When the login prompt displays, you have successfully called the service processor.
5. Type `logout` to disconnect from the operating system. The message `No Carrier` displays on your remote terminal.
6. Call your server again. The operating system answers and offers you the login prompt. If these tests are successful, call-in is working.
7. Log in and type `shutdown -F` to shut down your server.
8. The message `No Carrier` displays on your remote terminal.

Testing Call-Out

During the service processor setup, you entered your phone numbers for the pager and customer voice. These numbers are used for this test.

1. Your remote terminal is disconnected as a result of the Call-In test.
2. Call your server again.
3. At the service processor Main Menu, select **Call-In/Call-Out Setup** menu, then select **Call-Out** test. This action causes a simulated error condition for the purposes of this test.
4. After a few moments, a message displays, regarding an illegal entry. Press Enter to clear the message and return to the main menu.
5. When your telephone rings, answer the call. You should hear the sound of a telephone being dialed. This is your computer trying to page you.

If this test is successful, call-out is working correctly.

Serial Port Configuration

To configure the serial port on an AIX system, do the following from an AIX console:

1. Log in as `root` user.
2. To determine if you have any serial ports already configured, type:

   `lsdev -Cc tty`

   If no serial ports are configured, none are listed. If you want to configure serial ports that are not listed, continue with the remaining steps.
3. Identify the serial port(s) with the modem(s).
4. Type `smit tty`.
5. Select **add tty**.

6. Select **RS232**.
7. Select **Baud rate 9600** or higher.
8. Select **login enable** and set the flow control to RTS.
9. Commit the selections and set up any other needed serial ports.
10. Exit SMIT.

Appendix D. Modem Configurations

Note: This appendix applies only to modems attached to the serial ports (S1 and S2) on the primary I/O book (location U1.18-P1-H2).

These configuration files do not apply to the modem attached to the Hardware Management Console (HMC).

Sample Modem Configuration Files

This appendix contains information about several sample modem configuration files that either work directly with your modem or provide a good starting point for a custom setup.

The sample modem configuration files are located in the firmware in **/usr/share/modems** subdirectory (if your server is using AIX) with the following names. A listing of each specific file is included in this appendix.

Generic Modem Configuration Files

AIX File Name	Service Processor Firmware File Name
modem_z.cfg	modem_z_sp
modem_z0.cfg	modem_z0_sp
modem_f.cfg	modem_f_sp
modem_f0.cfg	modem_f0_sp
modem_f1.cfg	modem_f1_sp

Specific Modem Configuration Files

AIX File Name	Service Processor Firmware File Name
modem_m0.cfg	modem_m0_sp
modem_m1.cfg	modem_m1_sp

Use the following selection procedures and your modem manual to determine which of the configuration files is suitable for your use.

Configuration File Selection

Use the following steps to select a configuration file:

1. Is your modem an IBM 7852-400?

   If Yes, use modem configuration file **modem_m0.cfg** and go to step 7.

   Note: The IBM 7852-400 modem has DIP switches on the right side of the unit. See "IBM 7852-400 DIP Switch Settings" on page 938 for the correct switch settings.

   If No, continue with step 2.

2. Is your modem an IBM 7857-017?

   If Yes, use modem configuration file **modem_m1.cfg** and go to step 7.

   Note: The IBM 7857-017 modem has two telephone line connections on the back of the unit. One is marked **LL** (for Leased Line), and the other is marked **PTSN** (for Public Telephone Switched Network). The service processor expects to use the modem on the public network, so the telephone line should attach to the PTSN connector.

   If No, continue with step 3.

3. Does your modem respond to the extended command set (prefixed with &)?

   If Yes, go to step 5. If No, continue with step 4.

4. Does your modem respond to:
   - ATZ reset command

     or
   - ATZ*n* reset commands, where *n* can be 0, 1, and so on?

     If ATZ, configuration file **modem_z.cfg** is recommended. If ATZ*n*, configuration file **modem_z0.cfg** is recommended.

   Go to step 7.

5. Does your modem command set include a test for V.42 error correction at the remote modem (often called "Auto-Reliable Mode")?

   If Yes, disable this test. You can use sample configuration files **/usr/share/modem_m0.cfg** or **/usr/share/modem_m1.cfg** as models to help you create a file for your particular modem. See "Customizing the Modem Configuration Files" on page 938 for more information. Go to step 7.

   If No, go to step 6.

6. Does your modem respond to:
   - AT&F reset command

     or
   - AT&F*n* reset commands, where *n* can be 0, 1, and so on?

   If AT&F, configuration file **modem_f.cfg** is recommended. If AT&F*n*, configuration file **modem_f0.cfg** or **modem_f1.cfg** is recommended, depending on which provides the hardware flow control profile.

7. You have completed selection of the configuration file.

   If your modem configuration selection is not available in the Service Processor Modem Configuration Menu, you must access it through the Configure Remote Maintenance Policy Service Aid.

   If you find it necessary to adjust any of these configuration files, use the manual provided with your modem to accomplish that task. It is recommended you select settings that enable hardware flow control and respond to DTR.

Note: Some older modems do not respond to the **X0** or **&R1** commands. Edit out these commands from the modem configuration file if yours is such a modem. See your modem manual for more information.

Some modems, such as the IBM 7857-017, are not designed for the paging function. Although they can be used for paging, they return an error message when they do not get the expected response from another modem. Therefore, even though the paging was successful, the error message causes the service processor to retry, continuing to place pager calls for the number of retries specified in the Call-Out Policy Setup Menu. These retries result in redundant pages.

Examples for Using the Generic Sample Modem Configuration Files

The following table contains information to help you determine which modem configuration file to use with various modems.

Modem	Setup Z	Setup Z0 (Rare)	Setup F	Setup F0	Setup F1
AT&T DataPort 2001 (Ring interrupt only on first ring)				X	
Bocamodem 1440E			X		
Hayes Smart Modem 300	X				
IBM 5841	X				
IBM 5843	X				
IBM 7851				X	
IBM 7852-10				X	
IBM 7855					X
USRobotics 36.6K Sportster					X
Zoom V.32			X		

Customizing the Modem Configuration Files

You can create your own modem configuration files or modify the samples provided. After you customize your modem configuration files, you *must* access them through the Configure Remote Maintenance Policy Service Aid rather than from the service processor menus.

If you have already set up your serial ports, line speeds, authorizations, and telephone numbers from the service processor menus, use the service aid to specify your customized modem configuration files.

If you have not already set up your serial ports, line speeds, authorizations, and telephone numbers from the service processor menus, use the service aids to set them while you specify your customized modem configuration files.

To disable Auto-Reliable Mode testing of the remote modem, use the sample modem configuration file **/usr/share/modems/modem_f.cfg** as a model that you can modify, as follows:
1. Find the necessary command in your modem manual.
2. Copy the **/usr/share/modems/modem_f.cfg** file to a new file with a different name (for example, **modem_fx.cfg**).
3. In the new file (**modem_fx.cfg**), change the line `Send "ATE0T\r"` to `Send "ATcccE0T\r"` where ccc is the added command as specified in your modem manual, as follows.

   Change the third line of each of the following stanzas:
   - `condout`
   - `condin`
   - `ripo`
4. Save the changes.

IBM 7852-400 DIP Switch Settings

If you are using a 7852-400 modem to enable service processor communications, for proper operation, the dual inline package (DIP) switches must be set according to the following table:

Switch	Position	Function
1	Up	Force DTR
2	Up	Flow Control &E4
3	Down	Result Codes Enabled
4	Down	Modem Emulation Disabled
5	Up	Auto Answer Enabled
6	Up	Maximum Throughput Enabled
7	Up	RTS Normal Functions
8	Down	Enable Command Mode
9	Down	Remote Digital Loopback Test Enabled
10	Up	Dial-Up Line Enabled
11	*Up	AT Responses Enabled (Extended Responses Disabled)
12	*Down	Asynchronous Operation
13	UP	28.8KB Line Speed
14	Up	
15	Up	CD and DSR Normal Functions
16	Up	2-Wire Leased Line Enabled

* Only switches 11 and 12 are changed from the factory default settings.

Xon/Xoff Modems

Some early modems assume software flow control (Xon/Xoff) between the computer and the modem. Modems with this design send extra characters during and after the transmitted data. The service processor cannot accept these extra characters. If your configuration includes such a modem, your functional results may be unpredictable.

The sample modem configuration files included in this appendix do not support these modems, so custom configuration files are necessary. Anchor Automation 2400E is an example of such a modem.

If you experience unexplainable performance problems that may be due to Xon/Xoff characters, it is recommended that you upgrade your modem.

Ring Detection

Most modems produce an interrupt request each time they detect a ring signal. Some modems generate an interrupt only on the first ring signal that they receive. AT&T DataPort 2001 is an example of such a modem.

The service processor uses the ring interrupt request to count the number of rings when Ring Indicate Power-On (RIPO) is enabled. If your modem produces an interrupt on only the first ring, set Ring Indicate Power-On to start on the first ring. Otherwise, you can choose to start Ring Indicate Power-On on any ring count.

Terminal Emulators

The service processor is compatible with simple ASCII terminals, and therefore compatible with most emulators. When a remote session is handed off from the service processor to the operating system, agreement between terminal emulators becomes important.

The server's operating system will have some built-in terminal emulators. You may also have a commercially available terminal emulation. It is important that the local and host computers select the same or compatible terminal emulators so that the key assignments and responses match, ensuring successful communications and control.

For best formatting, choose line wrap in your terminal emulator setup.

Recovery Procedures

Situations such as line noises and power surges can sometimes cause your modem to enter an undefined state. When it is being used for dial-in, dial-out or ring indicate power-on, your modem is initialized each time one of these actions is expected. If one of these environmental conditions occur after your modem has been initialized, it might be necessary to recover your modem to a known state.

If your modem communicates correctly with remote users, it is probably in control. It may be wise to occasionally change some of the functional settings and then change them back, just for the sense of security that the modem is communicating, and to ensure it has been initialized recently.

If your system is particularly difficult to access physically, another strategy is to protect it with an Uninterruptible Power Source (UPS) and a phone-line surge protector.

In case recovery becomes necessary, shut down your system using established procedures. Disconnect the power cable and press the power button to drain capacitance while power is disconnected. Disconnect and reconnect modem power, and then reconnect system power to completely reinitialize your system.

Transfer of a Modem Session

Because many modem command variations exist, the sample modem configuration files located at the end of this appendix have been written to capture the largest number of workable modem settings.

The modem command **&Dn** (where *n* is a number) generally sets the modem response to the Data Terminal Ready (DTR) signal from the server's serial port. The desired response is that the modem will hold a connection while DTR is enabled, and drop the connection when DTR is released. Using this mechanism, the server hangs up on a connection under normal conditions.

Consult your modem manual for its specific response scheme for the **&Dn** command.

Two strategies are available for dealing with the modem's response to DTR:
- Recovery
- Prevention

Before you use one of these strategies, determine if your server's modem is set up correctly to respond to DTR.

With the remote terminal connected to serial port 1 and defined as the Primary Console Device, there are two tests you can perform:
- Will the modem drop the connection after the `System initialization complete` message displays at the remote terminal?

  If Yes, the modem is set up correctly.

  If No, try another **&Dn** setting for your server's modem. See your modem manual for this information. The **&Dn** command appears in three places each in three of the sample modem configuration files, as follows:
- Will the server's modem disconnect when the power drops? You can make this observation at the remote terminal by commanding your server to shut down and power off. (Use the AIX command **shutdown -F**.) Watch for the message `NO CARRIER` on your remote terminal.

  If Yes, this is the correct response. The modem is set up correctly.

  If No, try another **&Dn** setting for your server's modem. See your model manual for this information. The **&Dn** command appears in three places each in three of the sample modem configuration files. Only the following sample modem configuration files contain the **&Dn** command (in three places each):
  - modem_f.cfg
  - modem_f0.cfg
  - modem_f1.cfg

  If you are using modem_z.cfg or modem_z0.cfg, you cannot control DTR response. If your remote terminal does not disconnect after logging off, you must command the remote terminal emulator to hang up. This then breaks the connection.

Recovery Strategy

The recovery strategy consists of making two calls to establish a remote session. This solution is the easiest to implement and allows more freedom for configuring your server's serial ports.

To set up a remote terminal session, dial into the service processor and start the system. After the operating system is loaded and initialized, the connection will be dropped. At this point, call the server back and the operating system will answer and offer you the login prompt.

Prevention Strategy

The disconnect is caused by the operating system when it initializes the Primary Console. The tests listed in "Transfer of a Modem Session" on page 940 are conducted with the remote terminal selected as the primary console to manifest the modem's response to DTR transitions.

- If a local ASCII terminal or a graphics console is to be a permanent part of your server, then make one of them the primary console. Your remote terminal will no longer experience the connection loss.

- If a local console is not a permanent part of your server, you can still assign either the unused graphics console or the unused serial port as the primary console. This gives you the desired seamless connection at your remote terminal.If you choose to use the unused serial port as the primary console, some initialization traffic will be sent to any serial device attached to that port. As a result, that serial device's connection and function could be affected. These impacts may make that port unattractive for devices other than a temporary local ASCII terminal.

Modem Configuration Sample Files

Sample File modem_m0.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP: modem_m0
#
# FUNCTIONS: Modem configuration file specifically for IBM 7852-400
#  modem with Auto-Reliable feature.  This feature must be turned off
#  for Catcher calls.  This example uses the AT&F reset command to
#  choose the factory defaults.
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#
#
# The modem has configuration switches.  They should be set to the
# factory default settings, except switches 11 and 12.  These must be
# to UP ("AT" responses) and DOWN (Asynchronous operation), respectively.

ICDelay 1
DefaultTO 10
CallDelay 120
#
#  %N  Call-Out phone number    %R   Return phone number
#
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:    send "AT&F&E2E0T\r"                  # Reset to factory defaults
                                                 # Reliable mode
                                                 # Echo off
            ignore "0\r" or "OK\r\n" timeout 2   # Ignore modem response.
            send "AT&E12&E14\r"                   # Disable pacing
                                                 # Disable data compression
            expect "0\r" or "OK\r\n" timeout 2   # Confirm commands successful.
            send "AT&SF1&S0S9=1\r"                # DSR independent of CD
                                                 # Force DSR on.
                                                 # CD respond time=100ms
            expect "0\r" or "OK\r\n" timeout 2   # Confirm commands successful.
            send "ATV0S0=0\r"                     # Numeric response code
                                                 # Auto-Answer off
            expect "0\r" or "OK\r\n" timeout 2   # Confirm commands successful.
            done

connect:    send "ATDT%N\r"                       # Tone dialing command.
                                                 # %N from Call Home setup.
                                                 # Expect a connection response.
            expect "33\r" or "31\r" or "28\r" or "26\r" or "24\r" or "21\r" or
"19\r" or "13\r" or "12\r" or "1\r" busy "7\r"
            timeout 60
            done

retry:      send "A/"                             # Repeat the previous command.
                                                 # Expect a connection response.
            expect "33\r" or "31\r" or "28\r" or "26\r" or "24\r" or "21\r" or
```

```
"19\r" or "13\r" or "12\r" or "1\r" busy "7\r"
            timeout 60
            done

 disconnect:
            delay 2                                  # Separate from previous data.
            send "+++"                               # Assure command mode.
            delay 2                                  # Allow mode switching delay.
            send "ATH0T\r"                           # Set modem switch-hook down
                                                     #  (i.e., hang up).
            ignore "0\r" or "OK\r" timeout 2         # Ignore modem response.
            send "ATE0Q1\r"                          # Initialize modem: Echo OFF,
                                                     #  Disable responses.
            ignore "0\r" timeout 1
            done

 condin:    send "AT&F&E2E0T\r"                      # Reset to factory defaults.
                                                     # Reliable mode
                                                     # Echo off
            ignore "0\r" or "OK\r\n" timeout 2       # Ignore modem response.
            send "AT&E12&E14\r"                      # Disable pacing
                                                     # Disable data compression
            expect "0\r" or "OK\r\n" timeout 2       # Confirm commands successful
            send "AT&SF1&S0S9=1\r"                   # DSR independent of CD.
                                                     # Force DSR on.
                                                     # CD respond time=100ms
            expect "0\r" or "OK\r\n" timeout 2       # Confirm commands successful.
            send "ATV0S0=2\r"                        # Numberic response code
                                                     # Answer on 2nd ring
            expect "0\r" timeout 2                   # Confirm commands successful.
            done

 waitcall:  ignore "2\r" timeout 1                   # Ignore first ring.
            expect "2\r" timeout 10                  # Pickup 2nd ring or timeout
                                                     # Expect a connection response.
            expect "33\r" or "31\r" or "28\r" or "26\r" or "24\r" or "21\r" or
"19\r" or "13\r" or "12\r" or "1\r" busy "7\r"
            timeout 60
            done

 page:      send "ATDT%N,,,,%R;\r"                   # %N = pager call center number
                                                     # Add enough commas to wait for
                                                     #  time to enter paging number.
                                                     # %R = paging number
            expect "0\r" timeout 60                  # Confirm successful command.
            delay 2                                  # Wait before hanging up.
            send "ATH0\r"                            # Hang up.
            expect "0\r" timeout 2                   # Confirm successful command.
            done

 ripo:      send "AT&F&E2E0T\r"                      # Reset to factory defaults.
                                                     # Reliable mode
                                                     # Echo off
            ignore "0\r" or "OK\r\n" timeout 2       # Ignore modem response.
            send "AT&E12&E14\r"                      # Disable pacing
                                                     # Disable data compression
            expect "0\r" or "OK\r\n" timeout 2       # Confirm successful command.
            send "AT&SF1&S0S9=1\r"                   # DSR independent of CD.
                                                     # Force DSR on.
                                                     # CD respond time=100ms
```

```
          expect "0\r" or "OK\r\n" timeout 2   # Confirm commands successful.
          send "ATV0S0=0\r"                     # Numeric response code
                                                 # Auto Answer OFF
          expect "0\r" timeout 2                 # Confirm commands successful.
          done                                   #

 error:                                          # Handle unexpected modem
                                                 # responses.
          expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
          delay 2
          done
```

Sample File modem_m1.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP modem_m1
#
# FUNCTIONS: Modem configuration file specifically for IBM 7857-017 modem with
#  Auto-Reliable feature.  This feature must be turned off for Catcher calls.
#  This example uses the AT&F reset command to choose the factory defaults.
#
#  To allow dial commands for digital pagers, it is necessary to reduce
#  the number of characters in the dial command.  Each comma (delay) has
#  been set to 6 seconds (S8=6) for that reason.
#
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#


ICDelay 1
DefaultTO 10
CallDelay 120
#
#  %N  Call-Out phone number     %R    Return phone number
#
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:    send "AT&F*E0E0\r"                   # Reset to factory defaults.
                                                 # *E0=data compression disabled
                                                 # E0=echo disabled
            ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
            send "AT#F0*Q2S8=6\r"                # Trellis modulation disabled
                                                 # Retrain with adaptive rate
                                                 # Set ,=6second
            expect "0\r" or "OK\r\n" timeout 2  # Confirm commands successful
            send "ATV0X0S0=0\r"                  # Numeric response code
                                                 # AT compatible messages
                                                 # Auto-Answer disabled
            expect "0\r" or "OK\r\n" timeout 2  # Confirm commands successful.
            done

connect:    send "ATDT%N\r"                       # Tone dialing command.
                                                 # %N from Call Home setup.
            expect "1\r" busy "7\r" timeout 60  # Expect a connection response.
            done

retry:      send "A/"                             # Repeat the previous command.
            expect "1\r" busy "7\r" timeout 60  # Expect a connection response.
            done

disconnect:
            delay 2                              # Separate from previous data.
            send "+++"                           # Assure command mode.
            delay 2                              # Allow mode switching delay.
            send "ATH0\r"                        # Set modem switch-hook down
                                                 #  (i.e., hang up).
            ignore "0\r" or "OK\r" timeout 2    # Ignore modem response.
```

```
          send "ATE0Q1\r"                              # Initialize modem: Echo OFF,
                                                        #  Disable responses.
          ignore "0\r" timeout 1
          done

 condin:  send "AT&F*E0E0\r"                            # Reset to factory defaults.
                                                        # *E0=data compression disabled
                                                        # E0=echo disabled
          ignore "0\r" or "OK\r\n" timeout 2            # Ignore modem response.
          send "AT#F0*Q2\r"                             # Trellis modulation disabled
                                                        # Retrain with adaptive rate
          expect "0\r" or "OK\r\n" timeout 2            # Confirm commands successful
          send "ATV0X0S0=2\r"                           # Numeric response code
                                                        # AT compatible messages
                                                        # Answer on 2nd ring
          expect "0\r" timeout 2                        # Confirm commands successful.
          done

 waitcall: ignore "2\r" timeout 1                       # Ignore first ring.
          expect "2\r" timeout 10                       # Pick up second ring
                                                        #  or timeout.
                                                        # Expect a connection response.
          expect "1\r" timeout 60
          done

 page:    send "ATD%N,%R\r"                             # %N = pager call center number
                                                        # commas=6sec wait time to
                                                        #   enter paging number.
                                                        # %R = return number
          expect "0\r" or "3\r" timeout 30              # Confirm successful command.
          delay 2                                       # Wait before hanging up.
          send "+++"                                    # Assure command mode.
          delay 2                                       # Allow mode switching delay.
          send "ATH0\r"                                 # Hang up.
          expect "0\r" timeout 2                        # Confirm successful command.
          done

 ripo:    send "AT&F*E0E0\r"                            # Reset to factory defaults.
                                                        # *E0=data compression disabled
                                                        # E0=echo disabled
          ignore "0\r" or "OK\r\n" timeout 2            # Ignore modem response.
          send "AT#F0*Q2\r"                             # Trellis modulation disabled
                                                        # Retrain with adaptive rate
          expect "0\r" or "OK\r\n" timeout 2            # Confirm successful command.
          send "ATV0X0S0=0\r"                           # Numeric response code
                                                        # AT compatible messages
                                                        # Auto-Answer disabled
          expect "0\r" timeout 2                        # Confirm commands successful.
          done                                          #

 error:                                                 # Handle unexpected modem
                                                        #  responses.
          expect "8\r" or "7\r" or "4\r" or "3\r"
          delay 2
          done
```

Sample File modem_z.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP Z
#
# FUNCTIONS: Modem configuration file for many early Hayes* compatible modems.
#  This example uses the ATZ reset command to choose the factory defaults.
#  This setup will work for many modems, but it is required for early vintage
#  modems which respond to neither the ATZ0 reset command nor the extended (&)
#  commands.  Refer to your modem manual.
#
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#
#
# If the modem has configuration switches, they should be set to the
# factory default settings.


ICDelay 1
DefaultTO 10
CallDelay 120
#  AT  Attention Code          ,    Inserts delay in dialing commands
#  Z   Reset to factory defaults Q0   Turn on responses
#  E0  Turn echo off            Q1   Turn off responses
#  V0  Use numeric responses    S0=0 Automatic answer inhibit
#  +++ Escape to command mode   S0=2 Answer on second ring
#  H0  Hang-up                  T =  Tone mode.  When used as T\r, it is a
#                                    no op to maintain program synchronization
#                                    when modem may/will echo the commands.
#
#  %N  Call-Out phone number    %P   Paging phone number
#  %S  Modem speed (available to users)
#
# Following are common responses from a wide range of modems:
# 16, 15, 12, 10, 5 and 1 are connection responses.  Add others as required.
# 7=busy; 6=no dial tone; 4=error; 3=no carrier; 2=ring; 0=OK
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:    send "ATZQ0T\r"                        # Reset to factory defaults.
            ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
            send "ATE0T\r"                         # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2  #  Enable responses (Numeric),
            send "ATQ0V0T\r"                       #  Limit response codes.
            expect "0\r" timeout 2                 # Confirm commands successful.
            send "ATS0=0\r"                        # Set AutoAnswer OFF
            expect "0\r" timeout 2                 # Confirm command successful.
            done

connect:    send "ATDT%N\r"                        # Tone dialing command.
                                                   # %N from Call Home setup.

                                                   # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
 timeout 60
```

```
            done

 retry:      send "A/"                                # Repeat the previous command.

                                                      # Expect a connection response.
  expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
  timeout 60
            done

 disconnect:
            delay 2                                   # Separate from previous data.
            send "+++"                                # Assure command mode.
            delay 2                                   # Allow mode switching delay.
            send "ATH0T\r"                            # Set modem switch-hook down
                                                      #  (i.e., hang up).
            ignore "0\r" or "OK\r" timeout 2          # Ignore modem response.
            send "ATE0Q1\r"                           # Initialize modem: Echo OFF,
                                                      #  Disable responses.
            ignore "0\r" timeout 1
            done

 condin:     send "ATZQ0T\r"                          # Reset to factory defaults.
            ignore "0\r" or "OK\r\n" timeout 2        # Ignore modem response.
            send "ATE0T\r"                            # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2        #  Enable responses (Numeric),
            send "ATQ0V0T\r"                          #  Limit response codes.
            expect "0\r" timeout 2                    # Confirm commands successful.
            send "ATS0=2\r"                           # Set AutoAnswer ON
            expect "0\r" timeout 2                    # Confirm command successful.
            done

 waitcall: ignore "2\r" timeout 1                     # Ignore first ring.
         expect "2\r" timeout 10                      # Pick up second ring
                                                      #  or timeout.
                                                      # Expect a connection response.
  expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r"
  timeout 60
            done

 page:       send "ATDT%N,,,,%R;\r"                   # %N = pager call center number
                                                      # Add enough commas to wait for
                                                      #  time to enter paging number.
                                                      # %R = paging number

                                                      # Confirm successful command.
            expect "0\r" timeout 60
            delay 2                                   # Wait before hanging up.
            send "ATH0T\r"                            #  Hang up.
            expect "0\r" timeout 2                    # Confirm successful command.
            done

 ripo:       send "ATZQ0T\r"                          # Reset to factory defaults.
            ignore "0\r" or "OK\r\n" timeout 2        # Ignore modem response.
            send "ATE0T\r"                            # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2        #  Enable responses (Numeric),
            send "ATQ0V0T\r"                          #  Limit response codes.
            expect "0\r" timeout 2                    # Confirm commands successful.
            send "ATS0=0\r"                           # Set AutoAnswer OFF
            expect "0\r" timeout 2                    # Confirm command successful.
            done                                      # RI Power On enabled.
```

```
error:                                              # Handle unexpected modem
                                                    #  responses.
            expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
            delay 2
            done
```

Sample File modem_z0.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP Z0
#
# FUNCTIONS: Modem configuration file for some early Hayes* compatible modems.
#  This example uses the ATZ0 reset command to choose the factory defaults.
#  This setup is recommended for modems that will respond to the ATZ0 command
#  and which do not respond to the extended (&) commands.  Refer to your modem
#  manual.
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#
#
# If the modem has configuration switches, they should be set to the
# factory default settings.

ICDelay 1
DefaultTO 10
CallDelay 120
#  AT  Attention Code          ,    Inserts delay in dialing commands
#  Z0  Reset. Restore Profile 0 Q0   Turn on responses
#  E0  Turn echo off           Q1   Turn off responses
#  V0  Use numeric responses   S0=0 Automatic answer inhibit
# +++  Escape to command mode   S0=2 Answer on second ring
#  H0  Hang-up                 X0=0 Limit modem response codes
#                              T =  Tone mode.  When used as T\r, it is a
#                                   no op to maintain program synchronization
#                                   when modem may/will echo the commands.
#
#  %N  Call-Out phone number     %P   Paging phone number
#  %S  Modem speed (available to users)
#
# Following are common responses from a wide range of modems:
# 16, 15, 12, 10, 5 and 1 are connection responses.  Add others as required.
# 7=busy; 6=no dial tone; 4=error; 3=no carrier; 2=ring; 0=OK
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:    send "ATZ0Q0T\r"                     # Reset modem. Select profile 0
            ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
            send "ATE0T\r"                       # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2  #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                   #  Limit response codes.
            expect "0\r" timeout 2              # Confirm commands successful.
            send "ATS0=0\r"                      # Set AutoAnswer OFF
            expect "0\r" timeout 2              # Confirm command successful.
            done

connect:    send "ATDT%N\r"                      # Tone dialing command.
                                                 # %N from Call Home setup.

                                                 # Expect a connection response.
  expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
```

```
   timeout 60
            done

retry:      send "A/"                                # Repeat the previous command.

                                                     # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
 timeout 60
            done

disconnect:
            delay 2                                  # Separate from previous data.
            send "+++"                               # Assure command mode.
            delay 2                                  # Allow mode switching delay.
            send "ATH0T\r"                           # Set modem switch-hook down
                                                     #  (i.e., hang up).
            ignore "0\r" or "OK\r" timeout 2         # Ignore modem response.
            send "ATE0Q1\r"                          # Initialize modem: Echo OFF,
                                                     #  Disable responses.
            ignore "0\r" timeout 1
            done

condin:     send "ATZ0Q0T\r"                         # Reset modem. Select profile 0
            ignore "0\r" or "OK\r\n" timeout 2       # Ignore modem response.
            send "ATE0T\r"                           # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2       #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                       #  Limit response codes.
            expect "0\r" timeout 2                   # Confirm commands successful.
            send "ATS0=2\r"                          # Set AutoAnswer ON
            expect "0\r" timeout 2                   # Confirm command successful.
            done

waitcall: ignore "2\r" timeout 1                     # Ignore first ring.
          expect "2\r" timeout 10                    # Pick up second ring
                                                     #  or timeout.
                                                     # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r"
 timeout 60
            done

page:       send "ATDT%N,,,,%R;\r"                   # %N = pager call center number
                                                     # Add enough commas to wait for
                                                     #  time to enter paging number.
                                                     # %R = paging number

                                                     # Confirm successful command.
            expect "0\r" timeout 60
            delay 2                                  # Wait before hanging up.
            send "ATH0T\r"                            # Hang up.
            expect "0\r" timeout 2                   # Confirm successful command.
            done

ripo:       send "ATZ0Q0T\r"                         # Reset modem. Select profile 0
            ignore "0\r" or "OK\r\n" timeout 2       # Ignore modem response.
            send "ATE0T\r"                           # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2       #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                       #  Limit response codes.
            expect "0\r" timeout 2                   # Confirm commands successful.
            send "ATS0=0\r"                          # Set AutoAnswer OFF
            expect "0\r" timeout 2                   # Confirm command successful.
```

```
        done                                     # RI Power On enabled.

 error:                                          # Handle unexpected modem
                                                 #   responses.
        expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
        delay 2
        done
```

Sample File modem_f.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP F
#
# FUNCTIONS: Modem configuration file for many recent Hayes* compatible modems.
#   This example uses the AT&F reset command to choose the factory defaults.
#   This set up is preferred for modems with extended (&) commands.  For early
#   vintage modems, setup Z or Z0 is recommended.  If your modem responds to
#   the extended (&) commands and to factory default choices (&Fn), setup file
#   F0 or F1 is recommended.
#
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#
#
# If the modem has configuration switches, they should be set to the
# factory default settings.

ICDelay 1
DefaultTO 10
CallDelay 120
#  AT  Attention Code            ,    Inserts delay in dialing commands
#  &F  Reset to default profile Q0   Turn on responses
#  E0  Turn echo off             Q1   Turn off responses
#  V0  Use numeric responses     S0=0 Automatic answer inhibit
#  +++ Escape to command mode     S0=2 Answer on second ring
#  H0  Hang-up                    X0=0 Limit modem response codes
#                                 T =  Tone mode.  When used as T\r, it is a
#                                      no op to maintain program synchronization
#                                      when modem may/will echo the commands.
#
# &C1  Detect CD                  &D2  Respond to DTR (often the default)
#
#  %N  Call-Out phone number      %P   Paging phone number
#  %S  Modem speed (available to users)
#
# Following are common responses from a wide range of modems:
# 16, 15, 12, 10, 5 and 1 are connection responses.  Add others as required.
# 7=busy; 6=no dial tone; 4=error; 3=no carrier; 2=ring; 0=OK
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:    send "AT&FQ0T\r"                    # Reset to factory defaults.
            ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
            send "ATE0T\r"                       # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2   #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                   #  Limit response codes.
            expect "0\r" timeout 2               # Confirm commands successful.
            send "ATS0=0\r"                      # Set AutoAnswer OFF
            expect "0\r" timeout 2               # Confirm command successful.
            send "AT&C1&D2\r"                    # Detect carrier and DTR.
            expect "0\r" timeout 2               # Confirm command successful.
            done
```

```
connect:    send "ATDT%N\r"                        # Tone dialing command.
                                                   # %N from Call Home setup.

                                                   # Expect a connection response.
  expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
  timeout 60
            done

retry:      send "A/"                              # Repeat the previous command.

                                                   # Expect a connection response.
  expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
  timeout 60
            done

disconnect:
            delay 2                                # Separate from previous data.
            send "+++"                             # Assure command mode.
            delay 2                                # Allow mode switching delay.
            send "ATH0T\r"                         # Set modem switch-hook down
                                                   #  (i.e., hang up).
            ignore "0\r" or "OK\r" timeout 2       # Ignore modem response.
            send "ATE0Q1\r"                        # Initialize modem: Echo OFF,
                                                   #  Disable responses.
            ignore "0\r" timeout 1
            done

condin:     send "AT&FQ0T\r"                       # Reset to factory defaults.
            ignore "0\r" or "OK\r\n" timeout 2     # Ignore modem response.
            send "ATE0T\r"                         # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2     #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                     #  Limit response codes.
            expect "0\r" timeout 2                 # Confirm commands successful.
            send "ATS0=2\r"                        # Set AutoAnswer ON
            expect "0\r" timeout 2                 # Confirm command successful.
            send "AT&C1&D2\r"                      # Detect carrier and DTR.
            expect "0\r" timeout 2                 # Confirm command successful.
            done

waitcall: ignore "2\r" timeout 1                   # Ignore first ring.
          expect "2\r" timeout 10                  # Pick up second ring
                                                   #  or timeout.
                                                   # Expect a connection response.
  expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r"
  timeout 60
            done

page:       send "ATDT%N,,,,%R;\r"                 # %N = pager call center number
                                                   # Add enough commas to wait for
                                                   #  time to enter paging number.
                                                   # %R = paging number

                                                   # Confirm successful command.
            expect "0\r" timeout 60
            delay 2                                # Wait before hanging up.
            send "ATH0T\r"                          # Hang up.
            expect "0\r" timeout 2                 # Confirm successful command.
            done

ripo:       send "AT&FQ0T\r"                       # Reset to factory defaults.
```

```
        ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
        send "ATE0T\r"                       # Initialize modem: Echo OFF,
        expect "0\r" or "OK\r\n" timeout 2  #  Enable responses (Numeric),
        send "ATQ0V0X0T\r"                   #  Limit response codes.
        expect "0\r" timeout 2               # Confirm commands successful.
        send "ATS0=0\r"                      # Set AutoAnswer OFF
        expect "0\r" timeout 2               # Confirm command successful.
        send "AT&C1&D2\r"                    # Detect carrier and DTR.
        expect "0\r" timeout 2               # Confirm command successful.
        done                                 # RI Power On enabled.

error:                                       # Handle unexpected modem
                                             #  responses.
        expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
        delay 2
        done
```

Sample File modem_f0.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP F0
#
# FUNCTIONS: Modem configuration file for many recent Hayes* compatible modems.
#  This example uses the AT&F0 reset command to choose the factory defaults.
#  This set up is preferred for modems with extended (&) commands.  For early
#  vintage modems, setup Z or Z0 is recommended.  If your modem responds to
#  the extended (&) commands and to factory default choices (&Fn), but doesn't
#  work properly with this setup file, setup F1 is recommended.
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#
#
# If the modem has configuration switches, they should be set to the
# factory default settings.

ICDelay 1
DefaultTO 10
CallDelay 120
#  AT  Attention Code            ,     Inserts delay in dialing commands
# &F0  Reset. Restore profile 0 Q0    Turn on responses
#  E0  Turn echo off             Q1    Turn off responses
#  V0  Use numeric responses     S0=0 Automatic answer inhibit
# +++  Escape to command mode    S0=2 Answer on second ring
#  H0  Hang-up                   X0=0 Limit modem response codes
#                                T =  Tone mode.  When used as T\r, it is a
#                                     no op to maintain program synchronization
#                                     when modem may/will echo the commands.
#
# &C1  Detect CD                 &D2  Respond to DTR (often the default)
# &R1  Ignore RTS (CTS)
#
#  %N  Call-Out phone number     %P   Paging phone number
#  %S  Modem speed (available to users)
#
# Following are common responses from a wide range of modems:
# 16, 15, 12, 10, 5 and 1 are connection responses.  Add others as required.
# 7=busy; 6=no dial tone; 4=error; 3=no carrier; 2=ring; 0=OK
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:     send "AT&F0Q0T\r"                    # Reset modem. Select profile 0
             ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
             send "ATE0T\r"                       # Initialize modem: Echo OFF,
             expect "0\r" or "OK\r\n" timeout 2  #  Enable responses (Numeric),
             send "ATQ0V0X0T\r"                   #  Limit response codes.
             expect "0\r" timeout 2               # Confirm commands successful.
             send "ATS0=0\r"                      # Set AutoAnswer OFF
             expect "0\r" timeout 2               # Confirm command successful.
             send "AT&C1&D2&R1\r"                 # Detect carrier and DTR,
                                                  #  Ignore RTS.
             expect "0\r" timeout 2               # Confirm command successful.
```

```
          done

connect:   send "ATDT%N\r"                        # Tone dialing command.
                                                  # %N from Call Home setup.

                                                  # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
 timeout 60
          done

retry:     send "A/"                              # Repeat the previous command.

                                                  # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
 timeout 60
          done

disconnect:
          delay 2                                 # Separate from previous data.
          send "+++"                              # Assure command mode.
          delay 2                                 # Allow mode switching delay.
          send "ATH0T\r"                          # Set modem switch-hook down
                                                  #  (i.e., hang up).
          ignore "0\r" or "OK\r" timeout 2        # Ignore modem response.
          send "ATE0Q1\r"                         # Initialize modem: Echo OFF,
                                                  #  Disable responses.
          ignore "0\r" timeout 1
          done

condin:    send "AT&F0Q0T\r"                      # Reset modem. Select profile 0
          ignore "0\r" or "OK\r\n" timeout 2      # Ignore modem response.
          send "ATE0T\r"                          # Initialize modem: Echo OFF,
          expect "0\r" or "OK\r\n" timeout 2      #  Enable responses (Numeric),
          send "ATQ0V0X0T\r"                      #  Limit response codes.
          expect "0\r" timeout 2                  # Confirm commands successful.
          send "ATS0=2\r"                         # Set AutoAnswer ON
          expect "0\r" timeout 2                  # Confirm command successful.
          send "AT&C1&D2&R1\r"                    # Detect carrier and DTR,
                                                  #  Ignore RTS.
          expect "0\r" timeout 2                  # Confirm command successful.
          done

waitcall: ignore "2\r" timeout 1                  # Ignore first ring.
          expect "2\r" timeout 10                 # Pick up second ring
                                                  #  or timeout.
                                                  # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r"
 timeout 60
          done

page:      send "ATDT%N,,,,%R;\r"                 # %N = pager call center number
                                                  # Add enough commas to wait for
                                                  #  time to enter paging number.
                                                  # %R = paging number

                                                  # Confirm successful command.
          expect "0\r" timeout 60
          delay 2                                 # Wait before hanging up.
          send "ATH0T\r"                           # Hang up.
          expect "0\r" timeout 2                  # Confirm successful command.
```

```
          done

 ripo:     send "AT&F0Q0T\r"                        # Reset modem. Select profile 0
           ignore "0\r" or "OK\r\n" timeout 2       # Ignore modem response.
           send "ATE0T\r"                           # Initialize modem: Echo OFF,
           expect "0\r" or "OK\r\n" timeout 2       #  Enable responses (Numeric),
           send "ATQ0V0X0T\r"                       #  Limit response codes.
           expect "0\r" timeout 2                   # Confirm commands successful.
           send "ATS0=0\r"                          # Set AutoAnswer OFF
           expect "0\r" timeout 2                   # Confirm command successful.
           send "AT&C1&D2&R1\r"                     # Detect carrier and DTR,
                                                    #  Ignore RTS.
           expect "0\r" timeout 2                   # Confirm command successful.
           done                                     # RI Power On enabled.

 error:                                             # Handle unexpected modem
                                                    #  responses.
           expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
           delay 2
           done
```

Sample File modem_f1.cfg

```
#
# COMPONENT_NAME: (ESPSETUP) ENTRY SERVICE PROCESSOR SETUP F1
#
# FUNCTIONS: Modem configuration file for many recent Hayes* compatible modems.
#  This example uses the AT&F1 reset command to choose the factory defaults.
#  This set up is for modems with extended (&) commands and which do not work
#  properly with setup F0.  For early vintage modems, setup Z or Z0 is
#  recommended.
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#
#
# If the modem has configuration switches, they should be set to the
# factory default settings.

ICDelay 1
DefaultTO 10
CallDelay 120
#  AT  Attention Code          ,    Inserts delay in dialing commands
# &F1  Reset. Restore profile 1 Q0   Turn on responses
#  E0  Turn echo off           Q1   Turn off responses
#  V0  Use numeric responses   S0=0 Automatic answer inhibit
#  +++  Escape to command mode  S0=2 Answer on second ring
#  H0  Hang-up                 X0=0 Limit modem response codes
#                              T =  Tone mode.  When used as T\r, it is a
#                                   no op to maintain program synchronization
#                                   when modem may/will echo the commands.
#
# &C1  Detect CD               &D2  Respond to DTR (often the default)
# &R1  Ignore RTS (CTS)
#
#  %N  Call-Out phone number    %P   Paging phone number
#  %S  Modem speed (available to users)
#
# Following are common responses from a wide range of modems:
# 16, 15, 12, 10, 5 and 1 are connection responses.  Add others as required.
# 7=busy; 6=no dial tone; 4=error; 3=no carrier; 2=ring; 0=OK
#
# PROGRAMMING NOTE: No blanks between double quote marks (").

condout:    send "AT&F1Q0T\r"                    # Reset modem. Select profile 1
            ignore "0\r" or "OK\r\n" timeout 2  # Ignore modem response.
            send "ATE0T\r"                       # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2  #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                   #  Limit response codes.
            expect "0\r" timeout 2               # Confirm commands successful.
            send "ATS0=0\r"                      # Set AutoAnswer OFF
            expect "0\r" timeout 2               # Confirm command successful.
            send "AT&C1&D2&R1\r"                 # Detect carrier and DTR,
                                                 #  Ignore RTS.
            expect "0\r" timeout 2               # Confirm command successful.
            done
```

```
connect:    send "ATDT%N\r"                         # Tone dialing command.
                                                     # %N from Call Home setup.

                                                     # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
 timeout 60
            done

retry:      send "A/"                                # Repeat the previous command.

                                                     # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r" busy "7\r"
 timeout 60
            done

disconnect:
            delay 2                                  # Separate from previous data.
            send "+++"                               # Assure command mode.
            delay 2                                  # Allow mode switching delay.
            send "ATH0T\r"                           # Set modem switch-hook down
                                                     #  (i.e., hang up).
            ignore "0\r" or "OK\r" timeout 2         # Ignore modem response.
            send "ATE0Q1\r"                          # Initialize modem: Echo OFF,
                                                     #  Disable responses.
            ignore "0\r" timeout 1
            done

condin:     send "AT&F1Q0T\r"                        # Reset modem. Select profile 1
            ignore "0\r" or "OK\r\n" timeout 2       # Ignore modem response.
            send "ATE0T\r"                           # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2       #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                       #  Limit response codes.
            expect "0\r" timeout 2                   # Confirm commands successful.
            send "ATS0=2\r"                          # Set AutoAnswer ON
            expect "0\r" timeout 2                   # Confirm command successful.
            send "AT&C1&D2&R1\r"                     # Detect carrier and DTR,
                                                     #  Ignore RTS.
            expect "0\r" timeout 2                   # Confirm command successful.
            done

waitcall: ignore "2\r" timeout 1                     # Ignore first ring.
          expect "2\r" timeout 10                    # Pick up second ring
                                                     #  or timeout.
                                                     # Expect a connection response.
 expect "16\r" or "15\r" or "14\r" or "12\r" or "10\r" or "5\r" or "1\r"
 timeout 60
            done

page:       send "ATDT%N,,,,%R;\r"                   # %N = pager call center number
                                                     # Add enough commas to wait for
                                                     #  time to enter paging number.
                                                     # %R = paging number

                                                     # Confirm successful command.
            expect "0\r" timeout 60
            delay 2                                  # Wait before hanging up.
            send "ATH0T\r"                           #  Hang up.
            expect "0\r" timeout 2                   # Confirm successful command.
            done
```

```
ripo:       send "AT&F1Q0T\r"                         # Reset modem. Select profile 1
            ignore "0\r" or "OK\r\n" timeout 2        # Ignore modem response.
            send "ATE0T\r"                            # Initialize modem: Echo OFF,
            expect "0\r" or "OK\r\n" timeout 2        #  Enable responses (Numeric),
            send "ATQ0V0X0T\r"                        #  Limit response codes.
            expect "0\r" timeout 2                    # Confirm commands successful.
            send "ATS0=0\r"                           # Set AutoAnswer OFF
            expect "0\r" timeout 2                    # Confirm command successful.
            send "AT&C1&D2&R1\r"                      # Detect carrier and DTR,
                                                      #  Ignore RTS.
            expect "0\r" timeout 2                    # Confirm command successful.
            done                                      # RI Power On enabled.

error:                                                # Handle unexpected modem
                                                      #  responses.
            expect "8\r" or "7\r" or "6\r" or "4\r" or "3\r"
            delay 2
            done
```

Appendix E. Ground Path

The ground path for the 406/70 is shown in the following figure.

SYSTEM RACK (Includes Secondary Frame)
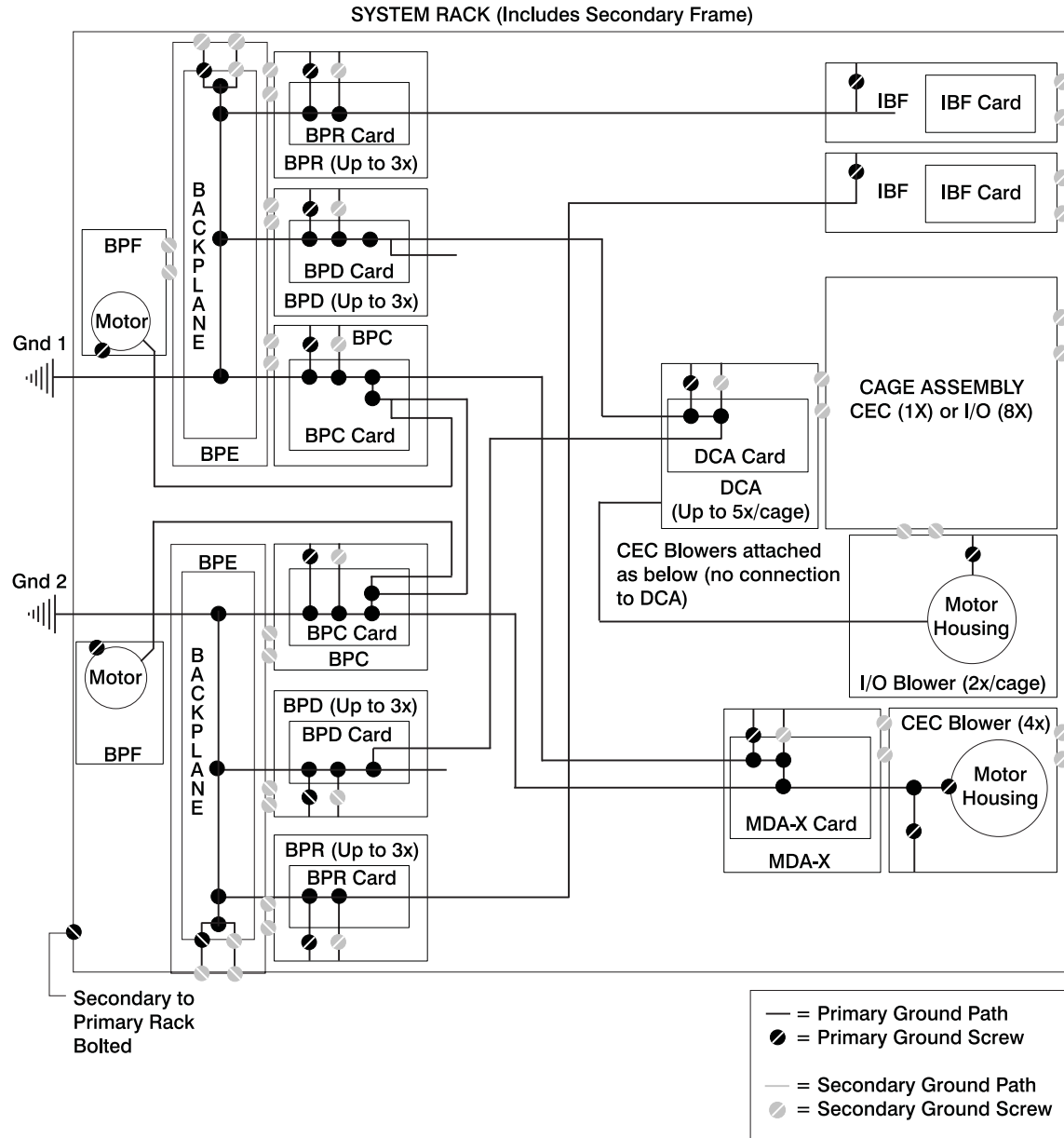
Index

Numerics

406/70 overview   1

A

about this book   xvii
acoustical
    noise
        emissions   928
adapter cassette
    removing   821
    replacing   823
adding
    FRUs   9
    serviceable event comments   8
air filters   819
AIX documentation   673, 675
AIX location codes   52, 56
attention LED   22
    HMC   22
automatic call home
    overview   5

B

battery
    disposal, recycling   927
    removal   765
bay locations   19
bay locations, DASD   25
boot list   672
boot mode menu   693
boot problems   338
bypass interlock, room EPO   16, 757

C

cabling
    I/O subsystem power   30, 33
    rules
        RIO   37
        RIO-2   37
call-in
    testing   932
call-in/call-out setup menu   705
call-out
    testing   932
call-out (call-home)   721
call-out policy setup menu   710
capacitor books and capacitor blanks   768
CD-ROM removal   900
change general access password   685
change privileged access password   685
chassis
    fan   818
checkpoints   303
    description   103

checkpoints *(continued)*
    firmware   313
    service processor   306
code, error   341
common service processor error codes   653
configuration
    client   677
    modem
        customizing files   938
        file selection   936
        sample files   935
        specific files   935
    NIM server   675
    service processor
        serial port   932
configurations
    modem   935
configure
    memory   718
    processor   718
console mirroring   722
    enable/disable   685
customer account setup menu   711
customizing files
    modem
        configuration   938

D

data flow   11
DCA books and DCA blanks   767
DCA power cables   30
deconfigure
    memory   718
    processor   718
description, ipl flow   303
diagnostics
    considerations   669
    loading   674
    online   670
        concurrent mode   672, 673
        maintenance mode   673
    overview   103
    running
        service mode   671
    running diagnostics on S1 port   106
    service mode   670
    standalone   674, 675
        considerations   674
        NIM server   675
        partition considerations   674
    using   669
disable console mirroring   685
diskette drive removal   901
documentation
    AIX   673, 675
DVD-RAM removal   900

965

E

F

G

H

I

K

L

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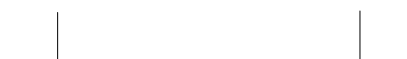**Please ask your Bull representative.** / Merci de demander à votre contact Bull.

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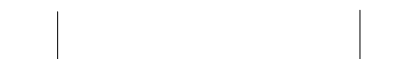
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