Bull

Diagnostic Information for Multiple Bus Systems
Version 5.2.0.10

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Hardware

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Trademarks and Acknowledgements

Contents

About This Book

The diagnostic information contained in this book is common to all multiple bus system units. Any information or diagnostic procedure that is specific to a certain system unit or device is in the service guide for that system unit or device.

Who Should Use This Book

This book is used for problem isolation and service procedures by a service representative specifically trained on the system unit being serviced.

This book combines operating instructions for hardware diagnostic programs with Maintenance Analysis Procedures (MAPs), corresponding Service Request Numbers (SRNs) and three-digit display codes. The SRNs are, in turn, keyed to failing function codes (FFCs) and corresponding part numbers for specific machine types.

How to Use This Book

This book has a version number in the title. Always use the book version that is equal to or greater than the first two digits of your diagnostics version level. For example, if your CD-ROM version is 2.2 or 2.25, use version 2.2 or higher of this diagnostics information manual.

If you are analyzing a system problem, start with Chapter 2, “Start of Call MAP”, on page 13.

The SRN lists in Chapters 28-32 direct you to the correct failing function. A cross-reference by name, (such as adapter or device) to Failing Function Code can be found in Chapter 39, “FRU Cross-References” , on page 503.

Refer to Chapter 25, “Installation Checkout”, on page 119 if you are checking the system unit or device after installation.

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 books are used to isolate a problem in the system.

- *Adapters, Devices, and Cable Information for Multiple Bus Systems* contains information about common device, adapter, and cabling of the system unit.
- *Site and Hardware Planning Information* is a planning and site preparation guide.

- *Installation Guide* contains the instructions for installing the operating system.
- The service documentation for the system units or devices contains the service procedures that are specific to that device or system unit. The service documentation contains the following:
  - Reference information such as data flow, cable diagrams, and specifications
  - System unit or device-specific Maintenance Analysis Procedures (MAPs), such as the power MAP
  - Removal and replacement procedures
  - The system unit or device installation procedures
  - Parts diagrams and parts lists.

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Chapter 1. Service Hints

Most hardware errors in the AIX error log contain *sysplanar0* as the resource name. The resource name identifies the resource that detected the error; it does not indicate that the resource is faulty or should be replaced. Use the resource name to determine the appropriate diagnostic to analyze the error.

Using the Maintenance Analysis Procedures

Some MAPs or procedures may ask whether the system is running one or more logical partition (LPAR) versus running a full machine partition. If you are not certain about the system configuration, ask the customer. If the system does not have an HMC (Hardware Management Console), then it is running a full machine partition (however, a system with an HMC may be running one or more logical partitions or running a full machine partition).

On a partitioned system, some service aids may only be run in a partition that is set up with service authority. To set up a partition with service authority, ask the system administrator to refer to the *Hardware Management Console Installation and Operations Guide*.

The maintenance analysis procedures (MAPs) provide the service representative a step-by-step procedure to analyze a problem with the system hardware. Hardware procedures are intended for use by a service representative trained on the system unit being serviced.

Some of the devices that are supported by the diagnostic programs also have their own maintenance documentation. You may want to use the maintenance documentation for that device before running the diagnostics for the system. Sometimes the maintenance package for an attached device allows the customer to continue operating the system while that device is being diagnosed. You can use the diagnostic programs to check the adapter to which that device is attached.

Begin all problem analysis with Chapter 2, “Start of Call MAP”, on page 13.

MAPs may direct you to run diagnostics. Information on how to run the diagnostics, in various modes, is in Chapter 26, “General Diagnostic Information”, on page 123. These MAPs may direct you to other MAPs or to other service information. Be prepared to record code numbers and other data while using these MAPs.

Some adapters may show a different SRN than expected if the adapter cannot be configured. If the SRN or FFC are listed by onscreen diagnostics, use that information first. Otherwise, use the part number that is on the adapter.

SRN and Failing Function Code (FFC) Discrepancies

SRNs listed in this book may not list the same FFCs and FRUs as reported by onscreen diagnostics. If the FRUs listed in this book do not solve the problem, check if any other FRUs are listed by onscreen diagnostics, and if so, try them.

About Slow Boot

Some systems support a service mode fast or slow boot. If you suspect a problem in the base system or can’t otherwise localize the defect, do a slow-mode boot in service mode.

This can be specified using the System Power Control Menu on the service processor 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 and new errors in the service processor error log. If a new error code is reported, use it in subsequent steps to continue problem analysis.

Multiple SRN or Error Code Reporting and Handling

The AIX® Diagnostics can generate SRNs using hardware tests or from error log analysis. The diagnostics also report platform-unique 8-digit error codes detected and logged during POST, and device-unique error codes generated by the device diagnostics.

When you run the diagnostics, more than one SRN or error code may be reported. This may occur when there are multiple entries in the error log or when the diagnostic tests detect multiple hardware problems. If additional SRNs are reported from a Previous Diagnostics Results screen, they should be processed before processing any SRNs from a problem reporting screen.

The SRNs are normally displayed in the order in which the devices are tested and the error log entries analyzed. Error log entries logged against a single device type are displayed in descending order with the newest entry first.

SRNs with a source code of **F** do not provide maximum isolation. Online diagnostics must run in Advanced and Problem Determination Mode to obtain maximum isolation. SRNs with a source code of G are the result of an error log entry.

Handle multiple SRNs and error codes in the following order:

1. 8-digit Error Codes. Multiple 8-digit error codes may not be listed in the correct order. See the ″Error Code to FRU Index″ in the system service guide to identify those error codes that require special handling.
2. SRNs in the range of A01-xxx to A1D-xxx.
3. SRNs with a source code other than F or G.
4. SRNs with a source code of F. Online diagnostics must be run in Advanced and Problem Determination Mode to obtain maximum isolation.
5. SRNs with a source code of G.

   Note: The priority for multiple SRNs with a source of G is determined by the time stamp of the failure. Follow the action for the SRN with the earliest time stamp first.
6. Device SRNs and error codes (5-digit SRNs).

If there are multiple SRNs within a group, it does not matter which SRN is handled first.

General SCSI Configuration Checks

The following steps apply to all types of SCSI problems:

1. Verify that all SCSI devices on the SCSI bus have a unique address.
2. Verify that all cables are connected securely and that there is proper termination at both ends of the SCSI bus.
3. Verify that the cabling configuration does not exceed the maximum cable length for the adapter in use. Refer to *Adapters, Devices, and Cable Information for Multiple Bus Systems* for more details on SCSI cabling.
4. Verify that the adapters and devices that you are working with are at the appropriate microcode levels for the customer situation. Contact your service support if you need assistance with microcode issues.
5. If there are multiple SCSI adapters on the SCSI bus, verify that the customer is using the appropriate software (such as HACMP or HANFS) to support such an arrangement. If the correct software is not in use, some SCSI errors should be expected when multiple adapters attempt to access the same SCSI device. Also, each adapter should have a unique address.

High Availability or Multiple SCSI System Checks

If you have a high-availability configuration, or if more than one system is attached to the same SCSI bus, do the following:

1. Verify that the adapters and devices have unique SCSI addresses. The default SCSI adapter address is always 7. If you have more than one adapter on the bus, change the address of at least one adapter. This can be done by using SMIT (SMIT Devices > SCSI Adapter > Change/Show characteristics of an adapter). You must make the changes to the database only, then reboot the system in order for the change to take effect.

   Note: Diagnostics defaults to using ID 7 (it is recommended that this ID not be used in high availability configurations).
2. If RAID devices such as the 7135 or 7137 are attached, be sure to run the proper diagnostics for the device. If problems occur, contact your service support structure for assistance. If the diagnostics are run incorrectly on these devices, misleading SRNs can result.
3. Diagnostics cannot be run against OEM devices; doing so results in misleading SRNs.
4. Verify that all cables are connected securely and that both ends of the SCSI bus is terminated correctly.
5. Verify that the cabling configuration does not exceed the maximum cable length for the adapter in use. Refer to the SCSI Cabling section in the *Adapters, Devices, and Cable Information for Multiple Bus Systems* for more details on SCSI cabling issues.
6. Verify that adapter and devices are at the appropriate microcode levels for the customer situation. Contact your service support structure if you need assistance with microcode issues.

SCSI-2 Single-Ended Adapter PTC Failure Isolation Procedure

Before replacing a SCSI-2 single-ended adapter, use these procedures to determine if a short-circuit condition exists on the SCSI bus. The same positive temperature coefficient (PTC) resistor is used for both the internal and external buses. The PTC protects the SCSI bus from high currents due to shorts on the cable, terminator, or device. It is unlikely that the PTC can be tripped by a defective adapter. Unless instructed to do so by these procedures, do not replace the adapter because of a tripped PTC resistor.

A fault (short-circuit) causes an increase in PTC resistance and temperature. The increase in resistance causes the PTC to halt current flow. The PTC returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is turned off. Wait 5 minutes for the PTC resistor to fully cool, then retest.

These procedures determine if the PTC resistor is still tripped and then determine if there is a short somewhere on the SCSI bus.

Determining Where to Start

Use the following to determine the adapter configuration and select the proper procedure:

- If there are external cables attached to the adapter, start with the ″External Bus PTC Isolation Procedure″ for your type adapter. The procedures are found in this chapter.
- If there are no external cables attached, start with the “Internal SCSI-2 Single-Ended Bus PTC Isolation Procedure” on page 6.
- If there is a combination of external and internal cables start with the ″External Bus PTC Isolation Procedure″ for your type adapter. The procedures are found in this chapter. If this procedure does not resolve the problem, continue with the ″Internal Bus PTC Isolation Procedure″ for your type adapter. The procedures are found in this chapter.

External SCSI-2 Single-Ended Bus PTC Isolation Procedure

Isolate the external SCSI bus PTC fault with the following procedure:

Note: The external bus is of single-ended design.

1. Ensure the system power and all externally attached device power is turned off. All testing is accomplished with the power off.
2. Disconnect any internal and external cables from the adapter and remove the adapter from the system.
3. Verify with a digital Ohmmeter that the internal PTC resistor, labeled Z1, (refer to the illustration after Internal SCSI-2 Single-Ended Bus PTC Isolation Procedure, step 3 on page 6) is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC resistor to cool and measure again.
4. This step determines if there is a short on the adapter. Locate Capacitor C1 and measure the resistance across it by using the following procedure:
   a. Connect the positive lead to the side of the capacitor where the + is indicated on the board near C1. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor marked ″GND.″ Be sure to probe at the solder joint where the capacitor and board come together.
   c. If there is no short present, then the resistance reading is high, typically hundreds of Ohms.

   Note: Because this is a measurement across unpowered silicon devices, the reading is a function of the Ohmmeter used.

   - If there is a fault, the resistance reading is low, typically below 10 Ohms. Because there are no cables attached, the fault is on the adapter. Replace the adapter.

     Note: Some multi-function meters label the leads specifically for voltage measurements. When using this type of meter to measure resistance, the plus lead and negative lead my not be labeled correctly. If you are not sure that your meter leads accurately reflect the polarity for measuring resistance, repeat this step with the leads reversed. If the short circuit is not indicated with the leads reversed, the SCSI bus is not faulted (shorted).
   - If the resistance measured was high, proceed to the next step.
5. Reattach the external cable to the adapter, then do the following:
   a. Measure across C1 as previously described.
   b. If the resistance is still high, in this case above 10 Ohms, then there is no apparent cause for a PTC failure from this bus. If there are internal cables attached continue to the “Internal SCSI-2 Single-Ended Bus PTC Isolation Procedure” on page 6.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the external SCSI bus. Troubleshoot the external SCSI bus by disconnecting devices and terminators. Measure across C1 to determine if the fault has been removed. Replace the failing component. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

External SCSI-2 Single-Ended Bus Probable Tripped PTC Causes

The following list provides some suggestions of things to check when the PTC is tripped:

- A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
- Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C1.
- Plugging or unplugging a cable or terminator while the system is turned on (hot plugging).
- A shorted device.

- Differential devices or terminators are attached to the single-ended SCSI bus.

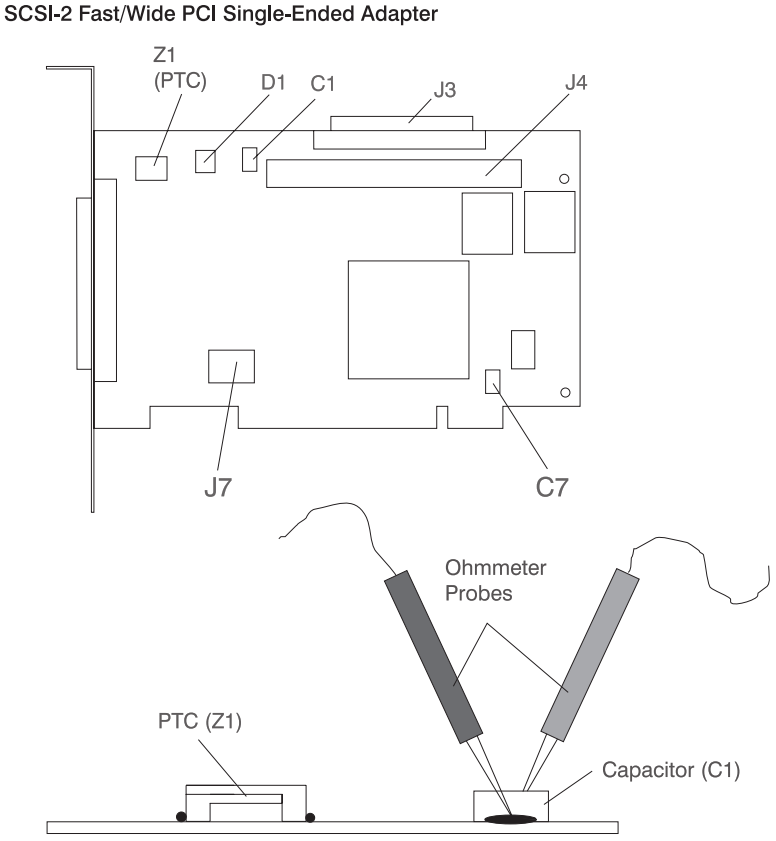
  Note: The SCSI-2 Fast/Wide and Ultra PCI Adapters use an onboard electronic terminator on the external SCSI bus. When power is removed from the adapter, as in the case of this procedure, the terminator goes to a high impedance state and the resistance measured cannot be verified, other than it is high. Some external terminators use an electronic terminator, which also goes to a high impedance state when power is removed. Therefore, this procedure is designed to find a short or low resistance fault as opposed to the presence of a terminator or a missing terminator.

Internal SCSI-2 Single-Ended Bus PTC Isolation Procedure

Isolate the internal SCSI bus PTC resistor fault with the following procedure:

Note: The internal bus is single-ended.

1. Ensure that system power and all externally attached device power is turned off.
2. Disconnect any internal and external cables from the adapter then remove the adapter from the system.
3. Verify with a digital Ohmmeter, that the internal PTC resistor, labeled Z1, is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC to cool and measure again. Refer to the following illustration.



Note: Only the probe tips are touching the solder joints. Do not allow the probes to touch any other part of the component.

4. This step determines if there is a short on the adapter. Locate capacitor C1 and measure the resistance across it using the following procedure:
   a. Connect the positive lead to the side of the capacitor where the + is indicated. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.
   c. If there is no short present, the resistance reading is high, typically hundreds of Ohms.

   Note: Because this is a measurement across unpowered silicon devices, the reading is a function of the Ohmmeter used.

   • If there is a fault, the resistance reading is low, typically below 10 Ohms. Because there are no cables attached, the fault is on the adapter. Replace the adapter.

   Note: Some multi-function meters label the leads specifically for voltage measurements. When using this type of meter to measure resistance, the plus lead and negative lead my not be labeled correctly. If you are not sure that your meter leads accurately reflect the polarity for measuring resistance, repeat this step with the leads reversed. Polarity is important in this measurement to prevent forward-biasing diodes which lead to a false low resistance reading. If the short circuit is not indicated with the leads reversed, the SCSI bus is not faulted (shorted).

   • If the resistance is high and there is no internal cable to reattach, there is no apparent cause for the PTC resistor diagnostic failure.
   • If the resistance is high and there is an internal cable to reattach, proceed to the next step.
5. Reattach the internal cable to the adapter, then do the following:
   a. Measure across C1 as described above.
   b. If the resistance is still high, above 25 Ohms, there is no apparent cause for a PTC failure.
   c. If the resistance is less than 10 Ohms, a fault on the internal SCSI bus is possible. Troubleshoot the internal SCSI bus by disconnecting devices and terminators. Measure across C1 to determine if the fault has been removed.

   Note: Some internal cables have nonremovable terminators.

Internal SCSI-2 Single-Ended Bus Probable Tripped PTC Resistor Causes

The following list provides some suggestions of things to check when the PTC is tripped:

- A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
- Intermittent PTC failures can be caused by incorrectly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C1.
- A shorted device.
- On some systems, the terminator is fixed to the internal cable and cannot be removed. If all devices are removed from the cable and the resistance is still low, then the cable should be replaced.

Note: The SCSI-2 Fast/Wide and Ultra PCI adapters use an onboard electronic terminator on the internal SCSI bus. When power is removed from the adapter, as in the case of this procedure, the terminator goes to a high impedance state and the resistance measured cannot be verified, other than it is high. Some internal terminators use an electronic terminator, which also goes to a high impedance state when power is removed. Therefore, this procedure is designed to find a short or low resistance fault as opposed to the presence of a terminator or a missing terminator.

SCSI-2 Differential Adapter PTC Failure Isolation Procedure

Use this procedure when SRN xxx-240 or xxx-800 has been indicated.

The differential adapter can be identified by the 4-B or 4-L on the external bracket plate.

Before replacing a SCSI-2 differential adapter, use these procedures to determine if a short-circuit condition exists on the SCSI Bus. The PTC protects the SCSI bus from high currents due to shorts on the cable, terminator, or device. It is unlikely that the PTC can be tripped by a defective adapter. Unless instructed to do so by these procedures, do not replace the adapter because of a tripped PTC resistor.

A fault (short-circuit) causes an increase in PTC resistance and temperature. The increase in resistance causes the PTC to halt current flow. The PTC returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is turned off. Wait 5 minutes for the PTC resistor to fully cool, then retest.

These procedures determine if the PTC resistor is still tripped and then determine if there is a short somewhere on the SCSI bus.

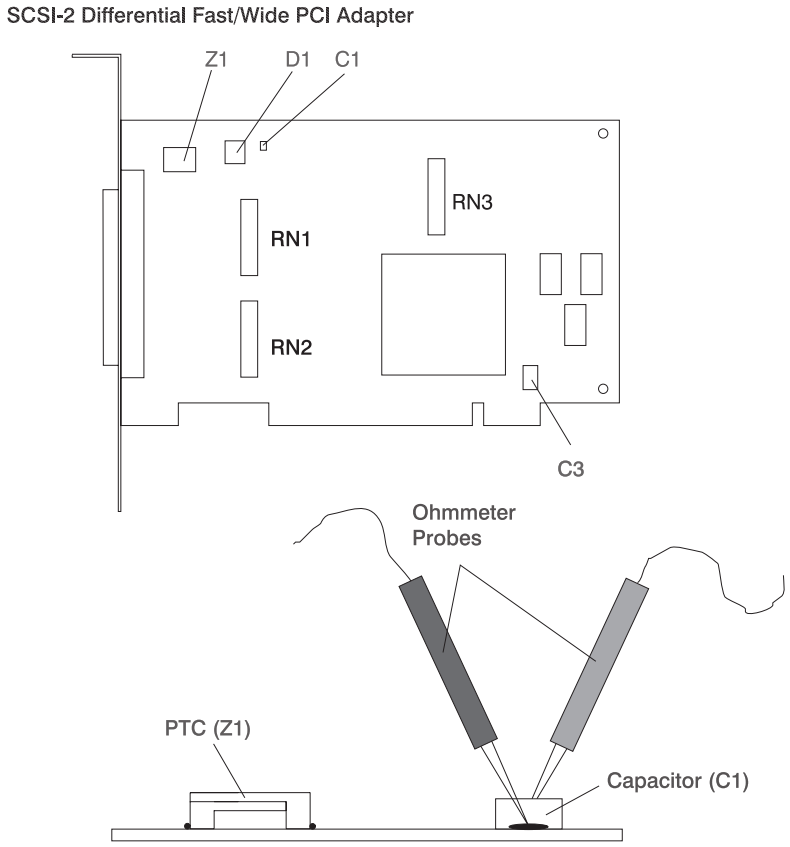
External SCSI-2 Differential Adapter Bus PTC Isolation Procedure

Isolate the external SCSI bus PTC fault with the following procedure:

Notes:

1. Only the probe tips are touching the solder joints. Do not allow the probes to touch any other part of the component.
2. The external bus is differential.

1. Ensure that system power and all externally attached device power is turned off.
2. Check to ensure all devices are marked SCSI Differential and that the terminator on the end of the SCSI bus is also marked differential. If not, you may have a single-ended SCSI device or terminator on the differential SCSI bus. Single-ended devices do not work on a differential SCSI bus and may cause a PTC type error to be reported. The entire SCSI bus may appear to be intermittent. After ensuring the system is completely differential, continue.
3. Disconnect the external cables from the adapter and remove the adapter from the system.
4. Verify with a digital Ohmmeter that the internal PTC resistor, labeled Z1, (refer to the illustration on page “External SCSI-2 Differential Adapter Bus PTC Isolation Procedure”) is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC resistor where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC resistor to cool and measure again.



5. This step determines if there is a short on the adapter. Locate capacitor C1 and measure the resistance across it using the following procedure:
   a. Connect the negative lead to the side of the capacitor marked ″GND″. Be sure to probe at the solder joint where the capacitor and board come together.

b. Connect the positive lead to the side of the capacitor marked ″Cathode D1″ on the board near C1. Be sure to probe at the solder joint where the capacitor and board come together.
   - If there is no fault present, then the resistance reading is 25 to 35 Ohms. The adapter is not faulty. Continue to the next step.
   - If the resistance measured is higher than 35 Ohms, check to see if RN1, RN2, and RN3 are plugged into their sockets. If these sockets are empty, you are working with a Multi-Initiators or High-Availability system. With these sockets empty, a resistive reading across C1 cannot be verified other than it measures a high resistance (not a short). If the resistance measurement is not low enough to be suspected as a fault (lower than 10 Ohms), continue to the next step.
   - If the resistance is high and there is no external cable to reattach, there is no apparent cause for the PTC diagnostic failure.
   - If the resistance reading is low, typically below 10 Ohms, there is a fault. Because there are no cables attached, the fault is on the adapter. Replace the adapter.
   - If the resistance measured was high and there is an external cable to reattach, proceed to the next step.

6. Reattach the external cable to the adapter.
   a. Measure across C1 as previously described.
   b. If the resistance is between 10 to 20 Ohms, there is no apparent cause for a PTC resistor failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the external SCSI bus. Troubleshoot the external SCSI bus by disconnecting devices and terminators. Measure across C1 to determine if the fault has been removed.

SCSI-2 Differential Adapter Probable Tripped PTC Causes

The following list provides some suggestions of things to check when the PTC is tripped:

- A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
- Intermittent PTC failures can be caused by incorrectly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C1.
- Plugging or unplugging a cable or terminator while the system is turned on (hot-plugging).
- A shorted device.
- Single-ended devices are attached to the differential SCSI bus.

Dual-Channel Ultra SCSI Adapter PTC Failure Isolation Procedure

Use the following procedures if diagnostics testing indicates a potential positive temperature coefficient (PTC) resistor fault or the TERMPWR Shorted LED is lit.

This procedure is used for SRNs 637-240 and 637-800 on the Dual-Channel Ultra SCSI Adapter. If the TERMPWR Shorted LED is lit, use this procedure to help isolate the source of the problem on the failing channel.

1. Identify the adapter by its label of 4-R on the external bracket. Then, determine if the failure is on channel A or channel B.
2. The same PTC is used for both the internal and external buses. The PTC protects the SCSI bus from high currents due to shorts on the cable, terminator, or device. It is unlikely that the PTC can be tripped by a defective adapter. A fault (short-circuit) causes an increase in PTC resistance and temperature. The increase in resistance causes the PTC to halt current flow. The PTC returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is turned off.

   Wait 5 minutes for the PTC resistor to fully cool, then retest.
3. If this same error persists, or the TERMPWR Shorted LED is lit, replace the components of the failing channel in the following order (wait five minutes between steps):
   a. If the failure is on the external cable, replace the following:
      1) Cable
      2) Device
      3) Attached subsystem
      4) Adapter
   b. If the failure is on the internal cable, replace the following:
      1) Cable
      2) Device
      3) Backplane
      4) Adapter
   c. If the failure persists, verify that the parts exchanged are in the correct channel (internal or external, A or B).

      If the errors are still occurring, continue isolating the problem by going to “Step 0050-9” on page 45.

64-bit PCI-X Dual Channel SCSI Adapter PTC Failure Isolation Procedure

Use the following procedures if diagnostics testing indicates a potential self-resetting thermal fuse problem. This procedure is used for SRN 2524-702 on the integrated dual-channel SCSI adapter in a 396/51 system.

1. Identify the adapter as the one embedded in the system board. Then, determine if the failure is on channel 0 or channel 1.
2. The thermal fuse protects the SCSI bus from high currents due to shorts on the terminator, cable, or device. It is unlikely that the thermal fuse can be tripped by a defective adapter. A fault (short-circuit) causes an increase in resistance and temperature of the thermal fuse. The increase in temperature causes the thermal fuse to halt current flow. The thermal fuse returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is turned off.

   Wait 10 seconds for the thermal fuse to reset itself and recover, then retest.
3. If the same error persists, replace the components of the failing channel in the following order. Wait 10 seconds for the thermal fuse to reset itself between steps.
   a. Cable

b. Device
c. DASD backplane (if present)
d. System board (adapter)

4. If the failure persists, verify that the parts exchanged are in the correct channel (0 or 1). If the errors are still occurring, continue isolating the problem by going to “Step 0050-9” on page 45.

Chapter 2. Start of Call MAP

This MAP is the starting point for a service call.

If you are servicing an SP system, go to the Start of Call MAP 100 in the *SP System Service Guide*.

If you are servicing a cluster, go to the Start of Call MAP 100 in the *Clustered Installation and Service Guide*.

Note: Do not run the diagnostics until you are instructed to do so.

1. If this system has a Hardware Maintenance Console (HMC) with Service Focal Point (SFP) or has one or more partitions running operating systems other than AIX, go to the ″Quick Entry MAP for Systems with Service Focal Point″ in the system service guide. Otherwise, go to step 2.
2. The Fast Path MAP in Chapter 3 is provided to help you quickly resolve a problem. Use the Fast Path MAP when you know or have been provided with a symptom.

   Use the following table to help determine your next step.

Symptom	Action
You do not have a problem or symptom, but you want to generate one.	Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 in this manual.
You have been provided with a problem or symptom.	Go to Chapter 3, “Fast Path MAP”, on page 15 in this manual.

Note: Some of the devices that are supported by the diagnostic programs also have their own maintenance documentation. You may want to use the maintenance documentation for that device before running the diagnostics for the system. Sometimes the maintenance package for the attached device allows the customer to continue operating the system while that device is being diagnosed. You can use the diagnostic programs to check the adapter to which that device is attached.

Chapter 3. Fast Path MAP

In most cases, these procedures direct you to run the Online Diagnostics. If the Online Diagnostics are not installed, the Standalone Diagnostics should be used.

Notes:

1. If the actions listed for a specific symptom do not resolve the problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.
2. If you replace a part, use Chapter 23, “MAP 0410: Repair Checkout”, on page 109 to verify the fix.
3. If you are directed to the system unit’s service guide, use the MAPs in the service guide to complete the repair. If none of the MAPs in the service guide have you verify the fix, return to this book and use Chapter 23, “MAP 0410: Repair Checkout”, on page 109.
4. If you are servicing an SP system, go to the Start of Call MAP 100 in the *SP System Service Guide*.
5. If the system you are servicing has a Hardware Management Console (HMC) with Service Focal Point (SFP), the various codes that may display are all listed as error codes by the SFP. The table below should be used to interpret the field listed as ″Error code″ by the SFP:

SFP Name	Number of Digits in error code	Characteristic	Interpretation
error code	any	contains a ″-″	SRN
error code	5	does not contain ″-″	SRN
error code	6	does not contain ″-″	error code
error code	8	does not contain ″-″	error code

When possible, run the Online Diagnostics in Service Mode unless you are directed otherwise.

Fast Path MAP Table of Contents

Fast Path Table

Symptoms	What You Should Do
Eight-Digit Error Codes	
You have an eight-digit error code.	Go to the ″Error Code to FRU Index″ in the service guide, read the notes on the first page, and do the listed action for the eight-digit error code. **Note:** If the repair for this code does not involve replacing a FRU (for instance, if you run an AIX command that fixes the problem or if you change a hot-pluggable FRU), then run the **Log Repair Action** option on resource **sysplanar0** from the Task Selection menu under Online Diagnostics to update the AIX error log.
Six-Digit Error Codes Containing No Dash (-)	
You have a six-digit error code (like an SRN) containing no dash (-) between the third and fourth digit.	Go to the ″Error Code to FRU Index″ in the service guide, read the notes at the beginning of this section, and do the listed action for the six-digit error code.
888 Sequence in Operator Panel Display	
An 888 sequence in the operator panel display.	Go to Chapter 9, “MAP 0070: 888 Sequence in Operator Panel Display”, on page 51.
The System Stops or Hangs With a Value Displayed in the Operator Panel Display	
The operator panel display alternates between two codes that begin with the letter E.	Go to the Entry MAP in the service guide.
The system stopped with a 4-digit code that begins with a digit other than 0 (zero) or 2 (two) displayed in the operator panel display.	Go to the Entry MAP in the service guide.
The system stopped with a 4-digit code that begins with 0 (zero) displayed in the operator panel display.	Record SRN 101-xxx (where xxx is the last three digits of the code displayed). Find the SRN in the SRN chapters and do the indicated action.
The system stopped with a 4-digit code that begins with a 2 (two) displayed in the operator panel display.	Record SRN 101-xxxx (where xxxx is the four digits of code displayed). The physical location code, AIX location code, or device name displays on system units with a multiple-line operator panel display if AIX 4.3.3 or later is installed. If a physical location code or an AIX location code is displayed, record it, then find the SRN in the SRN chapters and do the indicated action.
The system stopped with a 3-digit code that begins with either A or F displayed in the operator panel display.	Go to the Entry MAP in the service guide.
The system stopped with a 3-digit code that begins with a digit or character other than A or F in the operator panel display.	Record SRN 101-xxx (where xxx is the three digits of the code displayed). Find the SRN in the SRN chapters and do the indicated action.
SRNs	
An SRN is displayed when running diagnostics.	1. Record the SRN and location code. 2. Look up the SRN in the SRN chapters and do the listed action.
You have an SRN.	Look up the SRN in the SRN chapters and do the listed action. **Note:** Customer-provided SRNs should be verified. This can be done by using the Display Previous Results Service Aid or by running the diagnostics again.
System Automatically Reboots	

Symptoms	What You Should Do
System automatically reboots.	1. Turn off the system unit power. 2. Turn on the system unit power and boot from a removable media, disk, or LAN in service mode. 3. Run the diagnostics in Problem Determination Mode. 4. Select the All Resources option from the Resource Selection menu to test all resources. 5. If an SRN displays, lookup the SRN in the SRN chapters and do the action listed. 6. If an SRN is not displayed, suspect a power supply or power source problem. **Note:** If this system does not have a service processor, it may reboot without displaying an SRN or error code. Go to the ″Boot Problems/Concerns″ in the system service guide.
System does not Reboot When Reset Button is Pushed	
System does not reboot (reset) when the reset button is pushed.	Record SRN 111-999. Find the SRN in the SRN chapters and do the indicated action.
ASYNC Communication Problems	
You suspect an Async communication problem.	1. Run the Advanced Async Diagnostics on the ports you are having problems with. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. If you suspect a problem with the Async Concentrator, Remote Async Node, and so on, refer to the documentation in *Adapters, Devices, and Cable Information for Multiple Bus Systems* on these devices and perform any tests or checks listed.
SCSI Adapter Problems	
You suspect a SCSI adapter problem. SCSI Adapter Diagnostics can only be run on a SCSI adapter that was not used for booting. The POST tests any SCSI Adapter before attempting to use it for booting. If the system was able to boot using a SCSI adapter, then the adapter is most likely good. SCSI adapters problems are also logged into the error log and are analyzed when the Online SCSI Diagnostics are run in Problem Determination Mode. Problems are reported if the number of errors is above defined thresholds.	1. Run the Online SCSI Adapter Diagnostic in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43. **Note:** If you cannot load diagnostics (standalone or online) go to MAP 1540 in the service guide.
SCSI Bus Problems	
You suspect a SCSI bus problem.	1. Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43. 2. Use the SCSI Bus Service Aid to exercise and test the SCSI Bus.
Tape Drive Problems	

Symptoms	What You Should Do
You suspect a tape drive problem.	1. Refer to the tape drive documentation and clean the tape drive. 2. Refer to the tape documentation and do any listed problem determination procedures. 3. Run the Online Advanced Tape Diagnostics in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 4. Use the Backup/Restore Media Service Aid to exercise and test the drive and media. 5. Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43. 6. Use the SCSI Bus Service Aid to exercise and test the SCSI bus. 7. Refer to the device section of *Adapters, Devices, and Cable Information for Multiple Bus Systems* for additional information and Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 of this manual for problem determination procedures. **Note:** Information on tape cleaning and tape-problem determination is normally either in the tape drive operator guide or the system operator guide.
CD-ROM Drive Problems	
You suspect a CD-ROM drive problem.	1. Refer to the CD-ROM documentation and do any listed problem determination procedures. 2. Before servicing a CD-ROM Drive ensure that it is not in use and that the power connector is correctly attached to the drive. If the load or unload operation does not function, replace the CD-ROM drive. 3. Run the Online Advanced CD-ROM Diagnostics in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 4. If the problem is with a SCSI CD-ROM drive, use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43. 5. If the problem is with a SCSI CD-ROM drive, use the SCSI Bus Service Aid to exercise and test the SCSI Bus. 6. Refer to the device section of *Adapters, Devices, and Cable Information for Multiple Bus Systems* for additional information and Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 of this manual for problem determination procedures. **Note:** Information on CD-ROM problem determination is usually in the CD-ROM drive operator guide or the system user’s guide.
SCSI Disk Drive Problems	

Symptoms	What You Should Do
You suspect a disk drive problem. Disk problems are logged in the error log and are analyzed when the Online Disk Diagnostics are run in Problem Determination Mode. Problems are reported if the number of errors is above defined thresholds. If the diagnostics are booted from a disk, then the diagnostics can only be run on those drives that are not part of the root volume group. However, error log analysis is run if these drives are selected. To run the disk diagnostic tests on disks that are part of the root volume group, the Standalone Diagnostics must be used.	1. Run the Online Advanced Disk Diagnostics in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. Run Standalone Disk Diagnostics. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 3. Use the Certify Disk Service Aid to verify that the disk can be read. 4. Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43. 5. Use the SCSI Bus Service Aid to exercise and test the SCSI Bus. 6. Refer to the device section of *Adapters, Devices, and Cable Information for Multiple Bus Systems* for additional information and Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 of this manual for problem determination procedures.
Identify LED does not function on the drive plugged into the SES or SAF-TE backplane.	Use the Identify a Device attached to a SES Device Service aid listed under “SCSI Hot Swap Manager” on page 177 on the suspect drive LED. If the drive LED does not blink when put into the identify state, use FFC 2D00 and SRN source code ″B″ and go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
Activity LED does not function on the drive plugged into the SES or SAF-TE backplane.	Use the Certify Media Service aid (see“Certify Media” on page 154) on the drive in the slot containing the suspect activity LED. If the activity LED does not intermittently blink when running certify, use FFC 2D00 and SRN source code ″B″ and go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
Diskette Drive Problems	
You suspect a diskette drive problem.	1. Run the diskette drive diagnostics. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. Use the Diskette Media Service Aid to test the diskette media. 3. Use the Backup/Restore Media Service Aid to exercise and test the drive and media.
Token-Ring Problems	
You suspect a Token-Ring Adapter or network problem.	1. Run the Online Advanced Token-Ring Diagnostics in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. Use the **ping** command to exercise and test the network. 3. Refer to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 for additional information and problem determination procedures.
Ethernet Problems	

Symptoms	What You Should Do
You suspect an Ethernet Adapter or network problem.	1. Run the Online Advanced Ethernet Diagnostics in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. Use the **ping** command to exercise and test the network. 3. Refer to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 for additional information and problem determination procedures.
Display Problems	
You suspect a display problem.	1. Go to the Problem Determination Procedures for the display. 2. Run diagnostics on the adapter that the display is attached. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 3. Refer to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 for additional information and problem determination procedures.
Keyboard or Mouse	
You suspect a keyboard or mouse problem.	Run the device diagnostics. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. If you are unable to run diagnostics because the system does not respond to the keyboard, replace the keyboard or system planar. **Note:** If the problem is with the keyboard it could be caused by the mouse device. To check, unplug the mouse and then recheck the keyboard. If the keyboard works, replace the mouse.
Printer and TTY Problems	
You suspect a TTY terminal or printer problem.	1. Go to problem determination procedures for the printer or terminal. 2. Check the port that the device is attached to by running diagnostics on the port. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 3. Use the ″Testing the Line Printer″ procedure in Chapter 26, “General Diagnostic Information”, on page 123 to test the connection to the printer. If a problem exists, replace the following in the order listed: a. Device cable b. Port the printer or terminal is connected to.
Other Adapter Problems	
You suspect a problem on another adapter that is not listed above.	1. Run the Online Advanced Diagnostics in Problem Determination on the adapter you suspect. If an SRN is displayed, look up the SRN in the SRN chapters and do the listed action. 2. Refer to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 for additional information and problem determination procedures.

Symptoms	What You Should Do
System Messages	
A System Message is displayed.	1. If the message describes the cause of the problem, attempt to correct it. 2. Look for another symptom to use.
Processor and Memory Problems	
You suspect a memory problem. Memory tests are only done during POST. Only problems that prevent the system from booting are reported during POST. All other problems are logged and analyzed when the **sysplanar0** option under the Advanced Diagnostics Selection menu is run. System Crashes are logged in the AIX Error Log. The **sysplanar0** option under the Advanced Diagnostic Selection menu is run in Problem Determination Mode to analyze the error.	1. Power off the system. 2. Turn on the system unit power and load the Online Diagnostics in Service Mode. 3. Run either the **sysplanar0** or the **Memory** option under the Advanced Diagnostics in Problem Determination Mode. 4. If an SRN is displayed, record the SRN and location code. 5. Look up the SRN in the SRN chapters and do the listed action.
Service Processor Problems	
• Modem does not dial out or answer calls using Service Processor functions. • Service Processor menus do not display or display incorrectly on a TTY terminal. • Cannot input to the Service Processor menus using a TTY keyboard.	Remove the Service Processor and then run advanced diagnostics on the built-in serial ports. If an SRN is reported, lookup the SRN and do the indicated action. If no SRN is reported, replace the Service Processor. If the problem remains after replacing the Service Processor, replace the system planar.
Degraded Performance or Installed Memory Mismatch	
Degraded Performance or Installed Memory Mismatch	Degraded Performance can be caused by memory problems that cause a reduction in the size of available memory. To verify that the system detected the full complement of installed memory use one of the following methods based on the level of AIX being used. • AIX 4.2.1 and Higher From the Task Selection Menu select the 'Display Resource Attribute'. From the Resource Selection menu select one of the listed memory resources. Verify the amount of memory listed matches the amount actually installed. • All Other AIX Versions Use the Display or Change Configuration Service Aid to verify that all installed memory is being detected. The Display Vital Product Data (VPD) option shows the amount of memory that is installed. If an installed memory module or card does not appear or appears as the wrong size, replace it. If the problem is not corrected, replace the card or board that contains the missing memory.
Missing Resources	

Symptoms	What You Should Do
Missing Resources	**Note:** ISA resources must be configured before they appear in the configuration. The ISA Adapter Configuration Service Aid is used to configure ISA adapter for Standalone Diagnostics. SMIT can be used to configure during Online Diagnostics. Use the 'Display or Change Configuration or Vital Product Data (VPD) Service Aid' to verify that the resource was configured. If an installed resource does not appear, check that it is installed correctly. If you do not find a problem, go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25.
Missing Path on MPIO Resource	
Missing Path on MPIO Resource	If a path is missing on an MPIO resource, shown as the letter `P` in front of the resource in the resource listing, go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25.
System Hangs or Loops When Running the OS or Diagnostics	
The system hangs in the same application.	Suspect the application. To check the system: 1. Power off the system. 2. Turn on the system unit power and load the Online Diagnostics in Service Mode. 3. Select the **All Resources** option from the Resource Selection menu to test all resources. 4. If an SRN is displayed at anytime, record the SRN and location code. 5. Look up the SRN in the SRN chapters and do the listed action.
The system hangs in different applications.	1. Power off the system. 2. Turn on system unit power and load the Online Diagnostics in Service Mode. 3. Select the **All Resources** option from the Resource Selection menu to test all resources. 4. If an SRN is displayed at anytime, record the SRN and location code. 5. Look up the SRN in the SRN chapters and do the listed action.
The system hangs when running diagnostics.	Replace the resource that is being tested.
You Cannot Find the Symptom in This Table	
All other problems.	Go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25.
Exchanged FRUs Did Not Fix the Problem	
A FRU or FRUs you exchanged did not fix the problem.	Go to Chapter 6, "MAP 0030: Additional Problem Determination", on page 39.
RAID Problems	
You suspect a problem with a RAID.	A potential problem with a RAID adapter exists. Run diagnostics on the RAID adapter. Refer to the *RAID Adapters User's Guide and Maintenance Information* or the service guide for the RAID.

Symptoms	What You Should Do
System Date and Time Problems	
• The system does not retain the calendar date after the system has been booted. • The system does not retain the time of day after the system has been booted. **Note:** It is normal for the system time of day to gain or lose a few seconds each month.	1. Run the **sysplanar0** option under the Advanced Diagnostics in Problem Determination mode. If an SRN is reported, record the SRN and location code information and do the indicated action for the SRN. 2. Replace the TOD (NVRAM) battery. If this does not fix the problem, replace the system planar.
SSA Problems	
You suspect an SSA problem.	A potential problem with an SSA adapter exists. Run diagnostics on the SSA adapter. If the system has external SSA drives, refer to the *SSA Adapters User's Guide and Maintenance Information* or the service guide for your disk subsystem. If the system has internal SSA drives, go to the SSA MAP in either the system unit's service guide or user's guide.
Power Indicator Light is Not On	
A drawer power indicator is not on.	Refer to the Entry MAP section of the Maintenance Analysis Procedures (MAPs) in the system service manual.
System Power Problem	
The system does not power on.	Go to the Entry MAP in the service guide.
The system powers on when it should not.	Go to the Entry MAP in the service guide.

Chapter 4. MAP 0020: Problem Determination Procedure

Purpose of This MAP

Use this MAP to get a service request number (SRN) if the customer or a previous MAP provided none.

If you are unable to power the system on, refer to the MAP 1520 in the system's service guide.

Note: If another system connects to this system, refer to Chapter 27, "Using Standalone and Online Diagnostics", on page 133 for pertinent information before proceeding further.

Step 0020-1

Visually check the system for obvious problems such as unplugged power cables or external devices that are powered off.

Did you find an obvious problem?

NO Go to "Step 0020-2".

YES Fix the problem; then go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Step 0020-2

Are the Online Diagnostics installed?

Note: If you are uncertain how to answer the above question, answer it yes.

NO If the operating system is running, perform its shutdown procedure. Get help if needed. Go to "Step 0020-4" on page 26.

YES Go to "Step 0020-3" on page 26.

Step 0020-3

Note: When possible, run Online Diagnostics in Service Mode. Online diagnostics perform additional functions, compared to Standalone Diagnostics.

Run Online Diagnostics in Concurrent Mode when the customer does not let you power-off the system unit. To run Online Diagnostics in Service Mode, go to substep 5. If the system unit is already running in the service mode and you want to run online diagnostics, proceed to the question in this MAP, otherwise do substeps 1 through 4.

1. Log in with root authority or use CE login. If necessary, ask the customer for the password.
2. Enter the **diag -a** command to check for missing resources.
   a. If you see a command line prompt, proceed to substep 3 below.
   b. If the DIAGNOSTIC SELECTION menu is displayed, with the letter `M` shown next to any resource, select that resource, then press Commit (F7 key). Follow any instructions displayed. If you are prompted with a message `Do you want to review the previously displayed error` select **Yes** and press Enter. If an SRN displays, record it, and go to “Step 0020-15” on page 32. If there is no SRN, go to substep 3 below.
   c. If MISSING RESOURCE menu is displayed, follow any instructions displayed. If you are prompted with a message `Do you want to review the previously displayed error` select **Yes** and press Enter. If an SRN displays, record it, and go to “Step 0020-15” on page 32. If there is no SRN, go to substep 3 below.
3. Enter the **diag** command.
4. Go to “Step 0020-5” on page 27.
5. If the operating system is running, perform its shut down procedure (get help if needed).
6. Turn off the system unit power and wait 45 seconds before proceeding.
7. Turn on the system unit power.
8. Load the Online Diagnostics in Service Mode (if needed, refer to the service guide).
9. Wait until the Diagnostic Operating Instructions display or the system appears to have stopped.

Are the Diagnostic Operating Instructions Displayed?

NO Go to “Step 0020-16” on page 33.

YES Go to “Step 0020-5” on page 27.

Step 0020-4

1. Turn off the system unit power and wait 45 seconds before proceeding.
2. Turn on the system unit power. If the system supports Slow boot (See “About Slow Boot” on page 1), do a slow boot on the system. If the system does not support slow boot, do a normal boot
3. Load the Standalone Diagnostics in Service Mode. Refer to the system unit service guide if needed.
4. Wait until the Diagnostic Operating Instructions display or the system appears to have stopped.

Are the Diagnostic Operating Instructions Displayed?

NO Go to “Step 0020-16” on page 33.

YES Go to “Step 0020-5” on page 27.

Step 0020-5

Are the Diagnostic Operating Instructions Displayed (screen number 801001) with no obvious problem (for example, blurred or distorted)?

NO For display problems, go to “Step 0020-12” on page 30.

YES To continue with diagnostics, go to “Step 0020-6”.

Step 0020-6

Press the Enter key.

Is the FUNCTION SELECTION menu displayed (screen number 801002)?

NO Go to “Step 0020-13” on page 31.

YES Go to “Step 0020-7”.

Step 0020-7

1. Select the **ADVANCED DIAGNOSTICS ROUTINES** option.

   Notes:

   a. If the terminal type is not defined, do so now. You cannot proceed until this is complete.

   b. If you have SRNs from a Previous Diagnostics Results screen, process these Previous Diagnostics Results SRNs prior to processing any SRNs you may have received from an SRN reporting screen.
2. If the DIAGNOSTIC MODE SELECTION menu (screen number 801003) displays, select the **PROBLEM DETERMINATION** option.
3. Find your system response in the following table. Follow the instructions in the Action column.

   Note: This table spans several pages.

System Response	Action
Previous Diagnostic Results. Do you want to review the previously displayed error?	You have a pending item in the error log for which there is no corresponding **Log Repair Action**. To see this error, select **YES** at the prompt. Information from the error log is displayed in order of last event first. Record the error code, the FRU names and the location code of the FRUs. Go to “Step 0020-15” on page 32
The RESOURCE SELECTION menu or the ADVANCED DIAGNOSTIC SELECTION menu is displayed (screen number 801006).	Go to “Step 0020-11” on page 29.
The system halted while testing a resource.	Record SRN 110-xxx, where xxx is the first three digits of the menu number displayed in the upper-right corner of the diagnostic menu. If no menu number is displayed, use Chapter 39, “FRU Cross-References”, on page 503 to obtain the failing function code (FFC) for the device. Use the FFC code of the device for xxx. Go to “Step 0020-15” on page 32.

System Response	Action
The MISSING RESOURCE menu is displayed or the letter `M` is displayed alongside a resource in the resource list.	If the MISSING RESOURCE menu is displayed, follow the displayed instructions until either the ADVANCED DIAGNOSTIC SELECTION menu or an SRN is displayed. If an `M` is displayed in front of a resource (indicating that it is missing) select that resource then choose the Commit (F7 key). **Note:** Run any supplemental media that may have been supplied with the adapter or device, and then return to substep 1 of "Step 0020-7" on page 27. **Notes:** 1. If the SCSI Enclosure Services device appears on the Missing Resource list along with the other resources, select it first. 2. ISA adapters cannot be detected by the system. The ISA Adapter Configuration Service Aid in Standalone Diagnostics allows the identification and configuration of ISA adapters. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, go to "Step 0020-11" on page 29. If an 8-digit error code is displayed, go to the system's service guide and find the error in the ″Error Code to FRU Index″. Perform the listed action. If an SRN is displayed, record it, and go to "Step 0020-15" on page 32.
The message `The system will now continue the boot process` is displayed continuously on the system unit's console.	Go to "Step 0020-4" on page 26.
The message `Processing supplemental diagnostic diskette media` is displayed continuously on the system unit's console.	Call your service support structure.
The diagnostics begin testing a resource. **Note:** If the Problem Determination Option was selected from the DIAGNOSTIC MODE SELECTION menu, and if a recent error has been logged in the error log, the diagnostics automatically begin testing the resource.	Follow the displayed instructions. If the No Trouble Found screen is displayed, press Enter. If another resource is tested, repeat this step. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, go to "Step 0020-11" on page 29. If an SRN is displayed, record it, and go to "Step 0020-15" on page 32. If an eight-digit error code is displayed, record it and go to the system unit's service guide and find the error in the ″Error Code to FRU Index″. Perform the listed action.
The system did not respond to selecting the Advanced Diagnostics option.	Go to "Step 0020-13" on page 31.
A system unit with a beeper did not beep while booting.	Record SRN 111-947 and then go to "Step 0020-15" on page 32.
The system unit emits a continuous sound from the beeper.	Record SRN 111-947 and then go to "Step 0020-15" on page 32.
An SRN, or six-digit error code containing no dash (-), or an eight-digit error code is displayed.	Record the error code, the FRU names, and the location code for the FRUs. If an SRN is displayed, go to "Step 0020-15" on page 32. If a six-digit error code containing no dash (-) or an 8-digit error code is displayed, go to either the system's or subsystem's service guide and find the error in the ″Error Code to FRU Index″. Perform the listed action.

System Response	Action
The system stopped with a 3-digit or 4-digit code displayed in the operator panel display.	Record SRN 101-xxx (where xxx is the rightmost three digits of the displayed code). Go to “Step 0020-15” on page 32.
An 888 message is displayed in the operator panel display. **Note:** The 888 may or may not be flashing.	Go to Chapter 9, “MAP 0070: 888 Sequence in Operator Panel Display”, on page 51.

Step 0020-8

On the DIAGNOSTIC SELECTION or ADVANCED DIAGNOSTIC SELECTION menu, look through the list of resources to make sure that all adapters and SCSI devices are listed including any new resources.

Notes:

1. Resources attached to serial and parallel ports may not appear in the resource list.
2. ISA adapters cannot be detected by the system. The ISA Adapter Configuration Service Aid in Standalone Diagnostics allows the identification and configuration of ISA adapters.
3. If running diagnostics in a partition within a partitioned system, resources assigned to other partitions will not be displayed on the resource list.

Did you find the all the adapters or devices on the list?

NO Go to “Step 0020-9”.

YES Go to “Step 0020-11”.

Step 0020-9

Is the new device or adapter an exact replacement for a previous one installed at same location?

NO Go to “Step 0020-10”.

YES The replacement device or adapter may be defective. If possible, try installing it in an alternate location if one is available; if it works in that location, then suspect that the location where it failed to appear has a defective slot; schedule time to replace the hardware that supports that slot. If it does not work in alternate location, suspect a bad replacement adapter or device. If you are still unable to detect the device or adapter, contact your service support structure.

Step 0020-10

Is the operating system software to support this new adapter or device installed?

NO Load the operating system software.

YES The replacement device or adapter may be defective. If possible, try installing it in an alternate location if one is available; if it works in that location, then suspect that the location where it failed to appear has a defective slot; schedule time to replace the hardware that supports that slot. If it does not work in alternate location, suspect a bad replacement adapter or device. If you are still unable to detect the device or adapter, contact your service support structure.

Step 0020-11

Select and run the diagnostic test problem determination or system verification on one of the following:

- The resources with which the customer is having problems. If the resource is not shown on the DIAGNOSTIC SELECTION menu, then run diagnostics on its parent (the adapter or controller to which the resource is attached).
- The resources you suspect are causing a problem.
- All resources.

Note: When choosing **All Resources**, interactive tests are not done. If no problem is found running **All Resources** you should choose each of the individual resouces on the selection menu to run diagnostics tests on to do the interactive tests

Find the response in the following table or follow the directions on the test results screen.

Diagnostic Response	Action
An SRN, six-digit error code containing no dash (-), or an eight-digit error code is displayed on the screen.	Record the error code, the FRU names, and the location code for the FRUs. If an SRN is displayed, go to “Step 0020-15” on page 32. If a six-digit error code containing no dash (-) or an 8-digit error code is displayed, go to either the system’s or subsystem’s service guide and find the error in the ″Error Code to FRU Index.″ Perform the listed action.
The TESTING COMPLETE menu and the `No trouble was found` message are displayed, and you have not tested all of the resources.	Press Enter and continue testing other resources.
The TESTING COMPLETE menu and the `No trouble was found` message are displayed, and you have tested all of the resources.	Go to “Step 0020-14” on page 31. **Note:** If you have not run the **sysplanar** test, do so before going to “Step 0020-14” on page 31.
The system halted while testing a resource.	Record SRN 110-xxx, where xxx is the first three digits of the menu number displayed in the upper-right corner of the diagnostic menu screen. If no menu number is displayed, use Chapter 39, “FRU Cross-References”, on page 503 to obtain the failing function code (FFC) for the device. Use the FFC code of the device for xxx. Go to “Step 0020-15” on page 32.
When running the Online Diagnostics, an installed device does not appear in the test list. **Note:** If the missing device is an ISA adapter or a device connected to an ISA adapter, the device is not listed until you configure it.	Ensure that the diagnostic support for the device was installed. The Display Configuration service aid can be used to determine whether diagnostic support is installed for the device. Record SRN 110-101. Go to “Step 0020-15” on page 32. **Note:** Supplemental diskettes may be required if service aids are run from Standalone Diagnostics.
The IBM ARTIC960 Quad T1/E1 Adapter diagnostics displays a message indicating that the interface board (PMC) is either not installed or is malfunctioning.	Install a PMC board if not already installed. When running Online Diagnostics on any of the IBM ARTIC960 family of adapters and the message indicates that the PMC (daughter board) is not installed, but it is installed, do the following: • Reseat the PMC board, then run diagnostics. • If the response is the same, replace the PMC and then go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.
The symptom was not found in the table.	Go back to the Chapter 2, “Start of Call MAP”, on page 13.

Step 0020-12

The following step analyzes a console display problem.

Find your type of console display in the following table. Follow the instructions given in the Action column.

Type of Console Display	Action
TTY-type terminal	Be sure the TTY terminal attributes are set correctly. See ″Running the Diagnostic Programs from a TTY Terminal″ in Chapter 27, “Using Standalone and Online Diagnostics”, on page 133. If you did not find a problem with the attributes, go to the documentation for this type of TTY terminal, and continue problem determination. If you do not find the problem, record SRN 111-259; then go the “Step 0020-15” on page 32.
Graphics display	Go to the documentation for this type of graphics display, and continue problem determination. If you do not find the problem, record SRN 111-82c; then go to “Step 0020-15” on page 32.
HMC (Hardware Maintenance Console)	Go to MAP 1540 of the *HMC Maintenance Guide*. If HMC tests find no problem, there may be a problem with the communication between the HMC and the managed system. If the HMC communicates with the managed system through a network interface, verify whether the network interface is functional. If the HMC communicates with the managed system through the HMC interface, check the cable between the HMC and the managed system, if it is not causing the problem, suspect a configuration problem of the HMC communications setup.″

Step 0020-13

There is a problem with the keyboard.

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

Keyboard Type	Action
Type 101 keyboard (U.S.). Identify by the size of the Enter key. The Enter key is in only one horizontal row of keys.	Record SRN 111-736, then go to “Step 0020-15” on page 32.
Type 102 keyboard (W.T.). Identify by the size of the Enter key. The Enter key extends into two horizontal rows.	Record SRN 111-922; then go to “Step 0020-15” on page 32.
Kanji-type keyboard. (Identify by the Japanese characters.)	Record SRN 111-923; then go to “Step 0020-15” on page 32.
TTY terminal keyboard	Go to the documentation for this type of TTY terminal and continue problem determination.
HMC (Hardware Maintenance Console)	Go to MAP 1540 of the *HMC Maintenance Guide*. If HMC tests find no problem, there may be a problem with the communication between the HMC and the managed system. If the HMC communicates with the managed system through a network interface, verify whether the network interface is functional. If the HMC communicates with the managed system through the HMC interface, check the cable between the HMC and the managed system, if it is not causing the problem, suspect a configuration problem of the HMC communications setup.″

Step 0020-14

The diagnostics did not detect a problem.

If the problem is related to either the system unit or the I/O expansion box, refer to the service guide for that unit.

If the problem is related to an external resource, use the problem determination procedures, if available, for that resource.

If a problem occurs when running Online Diagnostics but not when running the Standalone Diagnostics, suspect a software problem.

Check for the presence of supplemental diagnostic material, such as diskettes or documentation.

This is possibly a problem with software or intermittent hardware. If you think that you have an intermittent hardware problem, go to Chapter 7, “MAP 0040: Intermittent Problem Isolation”, on page 41.

Step 0020-15

Take the following actions:

1. Handle multiple SRNs and error codes in the following order:
   a. 8-Digit Error Codes. Multiple 8-digit error codes listings are not always in the correct order. See the ″Error Code to FRU Index″ in the system service guide to identify those error codes that require special handling.
   b. SRNs in the range of A01-xxx to A1D-xxx.
   c. SRNs with a source code other than F or G.
   d. SRNs with a source code of F. Run Online diagnostics in Advanced and Problem Determination Mode to obtain maximum isolation.
   e. SRNs with a source code of G.

      Note: The priority for multiple SRNs with a source of G is determined by the time stamp of the failure. Follow the action for the SRN with the earliest time stamp first.

   f. Device SRNs and error codes (5-digit SRNs).

   If a group has multiple SRNs, it does not matter which SRN is handled first.
2. Find the SRN in Chapter 30, “Using the SRN List”, on page 213.

   Note: If the SRN is not listed, look for it in the following:
   - Any supplemental service manual for the device
   - The diagnostic problem report screen for additional information
   - The ″Service Hints″ service aid in Chapter 27, “Using Standalone and Online Diagnostics”, on page 133
   - The “CEREADME File” on page 124 (by using the Service Hints service aid)
3. Perform the action listed.
4. If you replace a part, go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0020-16

Refer to “Configuration Program Indicators” on page 191 for definitions of configuration program indicators. They are normally 0xxx on CHRP systems and Yxx on RSPC systems (where Y is a digit or character other than A or F).

Is a Configuration Program Indicator Displayed?

NO Go to the Entry MAP in the service guide.

YES Record SRN 101-xxx (where xxx is the rightmost three digits or characters of the Configuration Program Indicator). Go to “Step 0020-17”.

Step 0020-17

The physical location code, AIX location code, or device name displays on system units with a multiple-line operator panel display if AIX 4.3.3 or later is installed.

Is a physical location code or an AIX location code displayed on the operator panel display?

NO Go to “Step 0020-15” on page 32.

YES Record the location code, then go to “Step 0020-15” on page 32.

Chapter 5. MAP 0025: SCSI RAID Problem Determination Procedure

Purpose of This MAP

To determine if there is a problem with the SCSI RAID subsystem.

Step 0025-1

Determining the Status of the SCSI RAID Subsystem.

Ask the customer to determine the status of the RAID subsystem. Below is an example of this procedure:

1. Login as root (if not already root).
2. Type `smit pdam`.
3. Select **List PCI SCSI RAID Arrays**.
4. Select the adapter associated with the RAID upon which you want to do problem determination.
5. Press Enter.

Is the status of the RAID Array listed as `optimal`?

NO Go to “Step 0025-2”.

YES Fix the problem; then go to “Step 0025-12” on page 37.

Step 0025-2

Is the status of the RAID Array listed as `Degraded`?

NO Go to “Step 0025-3”.

YES Make a note of the failing drive Channel and ID, and go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89 to replace the drive on that channel.

Step 0025-3

Is the status of the RAID Array listed as `Reconstructing`?

NO Go to “Step 0025-5” on page 36.

YES Go to “Step 0025-4”.

Step 0025-4

Is the RAID Array reconstructing but no percentage is shown?

NO Wait for the RAID Array to complete reconstructing, then go to “Step 0025-12” on page 37.

YES Go to “Step 0025-5” on page 36.

Step 0025-5

Is the status of the RAID Array listed as `Defined`?

NO Go to “Step 0025-11” on page 37.

YES Go to “Step 0025-6”.

Step 0025-6

Ask the customer to determine the status of the RAID adapter. For example, type:

```
lsdev -C -l scraidX
```

where X is the number of the corresponding RAID adapter.

Is the result of this command that adapter is listed in `Defined` state?

NO Go to “Step 0025-11” on page 37.

YES Go to “Step 0025-7”.

Step 0025-7

Ask the customer to remove the adapter and reconfigure it. For example, to remove the adapter type:

```
rmdev -l scraidX
```

and to reconfigure the adapter, type:

```
cfgmgr -l scraidX
```

where X is the number of the corresponding RAID adapter.

Did the adapter become `Available`?

NO Go to “Step 0025-10” on page 37.

YES Go to “Step 0025-8”.

Step 0025-8

Ask the customer to configure the defined disk array. An example of this procedure:

1. Type `smitty pdam`
2. Select **Configure a Defined PCI SCSI Disk Array**.
3. Select the defined array that you want to make available.
4. A message displays indicating the outcome of the procedure. Make a note of the message.
5. Press PF10 to exit.

Did the procedure fail?

NO Go to “Step 0025-9”.

YES Go to “Step 0025-10” on page 37.

Step 0025-9

Was the array listed in `optimal` state?

NO Using the new state of the array, go to “Step 0025-2” on page 35.

YES Go to “Step 0025-10” on page 37

Step 0025-10

Run Diagnostics on the RAID system.

1. Type `diag`.
2. Select **Advanced Diagnostic Routines**.
3. Select **System Verification**.
4. If any menus other than the **Advanced Diagnostics Selection** menu are displayed, follow their instructions.
5. When the **Advanced Diagnostic Selection** menu displays, select **scraid***X* (where *X* is the ID of the SCSI RAID adapter). Press **F7**. (an alternative method of running steps 2-6 from AIX command line is to type `diag -v -d scraidX` where X is the ID of the SCSI RAID adapter).

Were any SRNs reported?

NO Contact you service support structure.

YES Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.

Step 0025-11

If the RAID array is not online, it is most likely due to multiple drive failures. If you believe that a failed drive is actually good, ask the customer to revive a failing drive. Below is an example of this procedure:

1. Login as root (if not already root).
2. Type `smit pdam`.
3. Select **Revive a failed Drive in a PCI SCSI Disk Array**.

If the drive can be recovered, it will be put into `Reconstructing` or `Degraded` mode, repeat “Step 0025-1” on page 35 using the indicated mode. If the drive cannot be recovered, go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89 to replace the drive.

Step 0025-12

1. Select **Advanced Diagnostic Routines**.
2. Select **Problem Determination**.
3. If any menus other than the **Advanced Diagnostics Selection** menu are displayed, follow their instructions.
4. When the **Advanced Diagnostic Selection** menu displays, select **scraidX** (where X is the ID of the SCSI RAID adapter). Press **F7**. (an alternative method of running substeps 2-6 from the AIX command line is to type `diag -d scraidX` where X is the ID of the SCSI RAID adapter).

If the resource is in use and you do not wish to take it offline, select **Testing Should Stop**. This will show information about the RAID subsystem including the address of the failing disk drives used by that SCSI RAID channel and ID.

Note: Problem determination will not be performed unless the device is NOT in use.

Were any SRNs reported?

NO Go to “Step 0025-13”.

YES Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.

Step 0025-13

1. Type `diag`
2. Select **Task Selection**
3. Select **Analyze Adapter Internal Log**

Are there any Hard or Media errors reported on specific drives?

NO Go to “Step 0025-14”.

YES Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89 to replace drives with media errors one at a time.

CAUTION:
Only for the 4-Channel PCI SCSI RAID adapter, drives will be decoded as channels 0-3 rather than channels 1-4. So if an error is indicated on channel 1 ID 4, the error is really on channel 2 ID 4.

Step 0025-14

Are there other RAID problems?

NO No RAID problems were found. Exit this MAP.

YES Contact your service support structure.

Chapter 6. MAP 0030: Additional Problem Determination

Purpose of This MAP

This MAP is used for problems that still occur after all FRUs indicated by the SRN or error code have been exchanged.

Step 0030-1

Some external devices (including rack drawers that contain devices) have their own problem-determination procedures. If the problem is related to an external device that has its own problem-determination procedure, run those procedures if not already run. If they do not correct the problem, continue with this MAP.

Step 0030-2

The problem may have been caused by a resource that has not been tested. System Checkout tests all resources. If the Online Diagnostics are installed and you are able to load them, then **All Resources** under the Diagnostic Selection menu should be run. If you get a different SRN, then look up the SRN in the SRN chapters and do the listed action. If you are unable to run **All Resources** under the Diagnostic Selection menu or you do not get another SRN when running it, continue with this MAP.

Step 0030-3

If the problem is related to a SCSI device, SCSI bus, or SCSI controller, go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43. If you are unable to isolate the problem with MAP 0050, continue with “Step 0030-4” on page 40.

Step 0030-4

1. Find the resource(s) that are identified by the SRN or error code in the following table.
2. Perform the first action listed for the resource.
3. If you exchange a FRU or change a switch setting, test the resource again.
4. If the action does not correct the problem, perform the next action until all actions have been tried. If an action says to exchange a FRU that you have already exchanged, go to the next action. If an action corrects the problem, go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.
5. If you perform all of the actions and do not correct the problem, check the Service Hints service aid for information. If the service aid does not help, call your service support structure.

Failing Resource	Repair Action
SCSI Device	Exchange the SCSI Controller. Replace the power supply.
Pluggable SCSI or IDE Controller	Exchange the planar into which the adapter is plugged.
Keyboard, tablet, mouse, dials, LPFK, diskette drive	Check the cable attaching the device to its adapter. If you do not find a problem, exchange the device’s adapter.
Pluggable adapters, CPU cards, and controllers	Determine whether the adapter contains any attached FRUs such as fuses, DRAMs, and crossover cables. 1. Check or exchange any attached FRU on the resource. 2. If the adapter is plugged into a riser card, check or exchange the riser card. 3. Exchange the planar into which the adapter is plugged. **Note:** To check for other FRUs, find the resource in Chapter 39, “FRU Cross-References”, on page 503; then go to the FFC listed.
System and I/O planars	Contact your service support structure.
Built-In serial ports	Replace the Service Processor if present.
A device attached to the system by a cable and an adapter.	1. Replace the adapter for the device. 2. Replace the cable to the device.
IDE Device	Replace the cable between the IDE controller and the device. If the IDE controller is packaged on a planar, replace that planar, otherwise replace the adapter containing the IDE controller.

Chapter 7. MAP 0040: Intermittent Problem Isolation

Purpose of This MAP

This MAP provides a structured way of analyzing intermittent problems. It consists of two tables: Hardware Symptoms and Software Symptoms.

Because software or hardware can cause intermittent problems, consider all symptoms relevant to your problem.

How to Use This MAP

This MAP contains information about causes of intermittent symptoms. In the following tables, find your symptoms, and read the list of things to check.

When you exchange a FRU, go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109 to check out the system.

Hardware Symptoms

Note: This table spans several pages.

Symptom of Hardware Problem	Things to Check For
Any hardware log entry in the error log.	Use the Hardware Error Report service aid to view the error log and check for: • Multiple errors on devices attached to the same SCSI bus. • Multiple errors on devices attached to the same async adapter. • Multiple errors on internally installed devices only. Contact your service support structure for assistance with error report interpretation.
Hardware-caused system crashes	• The connections on the CPU planar or CPU card • Memory modules for correct connections • Connections to the system planar. • Cooling fans operational • The environment for a too-high or too-low operating temperature. • Vibration: proximity to heavy equipment. • If available, run the system memory test from the System Management Services menu to check for intermittent memory problems.
System unit powers off a few seconds after powering On.	• Fan speed. Some fans contain a speed-sensing circuit. If one of these fans is slow, the power supply powers the system unit off. • Correct voltage at the outlet into which the system unit is plugged. • Loose power cables and fan connectors, both internal and external.
System unit powers off after running for more than a few seconds.	• Excessive temperature in the power supply area. • Loose cable connectors on the power distribution cables. • Fans turning at full speed after the system power has been on for more than a few seconds.

Symptom of Hardware Problem	Things to Check For
Only internally installed devices are failing.	Check the following items that are common to more than one device: • Ground connections on all of the disk drives and other types of drives installed. • Loose connections on the power cables to the planars, drives, fans, and battery. • System unit cooling. Is the input air temperature within limits? Are all the fans running at full speed? Are any of the vent areas blocked? • Signal cables to the diskette drives, and the power supply. • SCSI device signal cables for loose connectors and terminators. • Loose SCSI device address jumpers. • Possible contamination of any device that has a cleaning procedure. See the operator guide for cleaning instructions. • Excessive static electricity. • Correct voltage at the system unit power outlet
Only externally attached devices are failing.	Check the following items that are common to more than one device. • Check the SCSI signal cables to the devices for loose connectors and terminators. • Check devices that use jumpers to set the SCSI address for loose jumpers. • Check any device that has a cleaning procedure for contamination. See the operator guide for cleaning instructions. • Check for excessive static electricity. • Check the outlet that the device is plugged into for correct voltage. • Check the error log for entries for the adapter driving the failing devices. • Check the temperature of the devices. Are the cooling vents blocked? Are the fans running? • Check for other devices near the failing device that may be radiating noise (displays, printers, and so on).

Software Symptoms

Symptom of Software Problem	Things to Check For
Any symptom you suspect is related to software.	Use the software documentation to analyze software problems.
Software-caused system crashes	Check the following software items: • Is the problem only with one application program? • Is the problem only with one device? • Does the problem occur on a recently installed program? • Was the program recently patched or modified in any way? • Is the problem associated with any communication lines? • Check for static discharge occurring at the time of the failure.

Chapter 8. MAP 0050: SCSI Bus Problems

Purpose of This MAP

Use this MAP to analyze problems with a SCSI bus.

For additional information about this adapter, see the *Adapters, Devices, and Cable Information for Multiple Bus Systems*.

Considerations

- Remove power from the system before connecting and disconnecting cables or devices to prevent hardware damage or erroneous diagnostic results.
- Also, use this MAP for SCSI adapters that are built into system boards or I/O boards. Replace the system board or I/O board when the procedure calls for replacing the adapter.
- If the failure is a terminator power failure (SRNs xxx-226, xxx-240, xxx-800), always allow five minutes for the PTC to cool.
- The differential version of the adapter has socket-type terminators to support high-availability. If this is the adapter's configuration, the terminators would have been removed from the adapter. MAP steps requiring the removal of the cable from the adapter are inapplicable, since an adapter that is not terminated always fails diagnostics. Proper SCSI diagnostics require proper termination. If the configuration involves a Y-cable, leave it, with the appropriate terminator, attached to the adapter. Or, place an external differential terminator on the external port.
- If the system uses shared DASD or high-availability configuration, be sure that the other system sharing the devices is not using those devices. For additional information concerning high-availability configurations, see Chapter 1, "Service Hints", on page 1.
- For intermittent problems that cannot be resolved with this MAP, refer to Chapter 1, "Service Hints", on page 1.
- If the SCSI bus is attached to a RAID subsystem, refer to the RAID subsystem documentation for any problem determination.

Follow the steps in this MAP to isolate a SCSI bus problem.

Step 0050-1

Have recent changes been made to the SCSI configuration?

NO Go to "Step 0050-2" on page 44.

YES Go to "Step 0050-5" on page 44.

Step 0050-2

Are there any hot-swap devices controlled by the adapter?

NO Go to “Step 0050-3”.

YES Go to “Step 0050-11” on page 46.

Step 0050-3

Are there any devices other than hot-swappable devices controlled by the adapter?

NO Go to “Step 0050-4”.

YES Go to “Step 0050-13” on page 46.

Step 0050-4

Is an enclosure or drawer that supports hot-swap devices controlled by the adapter?

NO Go to “Step 0050-22” on page 48.

YES Go to “Step 0050-15” on page 47.

Step 0050-5

This step handles cases where recent changes have been made to the SCSI configuration.

Using the first three digits of the SRN, refer to the FFC listing and determine if the adapter is single-ended or differential.

Is the adapter a single-ended adapter?

NO Go to “Step 0050-6”.

YES Go to “Step 0050-7” on page 45.

Step 0050-6

The adapter’s termination jumper settings may be incorrect. Power off the system, and inspect Jumper J7. Refer to the ″SCSI Cabling″ section of the *Adapters, Devices, and Cable Information for Multiple Bus Systems* for the correct jumper settings.

Are the jumpers correct?

NO Go to “Step 0050-8” on page 45.

YES Go to “Step 0050-9” on page 45.

Step 0050-7

If the adapter *is not* being used in a high-availability configuration, be sure sockets RN1, RN2, and RN3 are populated.

If the adapter *is* being used in a high-availability configuration, be sure sockets RN1, RN2, and RN3 *are not* populated.

Go to "Step 0050-9".

Step 0050-8

1. Correct the jumper settings and reinstall the adapter and all cables.
2. Power on the system, and run diagnostics in system verification mode on the adapter.

Did the diagnostic pass?

NO Go to "Step 0050-9".

YES Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Step 0050-9

Check for the following problems:

- Address conflicts between devices.
- Cabling problems such as; configurations that exceed the maximum cable lengths, missing termination, or excessive termination.

  Refer to the *Adapters, Devices, and Cable Information for Multiple Bus Systems* for more details about supported SCSI cabling.

Did you find a problem?

NO Go to "Step 0050-2" on page 44.

YES Go to "Step 0050-10".

Step 0050-10

1. Correct the problem.
2. Power on the system, and run diagnostics in system verification mode on the adapter.

Did a failure occur?

NO Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

YES Go to "Step 0050-2" on page 44.

Step 0050-11

This step determines if a hot-swap device is causing the failure.

1. Power off the system.
2. Disconnect all hot-swap devices attached to the adapter.
3. Power on the system, and boot the system in the same mode that you were in when you received the symptom that led you to this MAP.
4. If the Missing Options menu displays, select the **The resource has been turned off, but should remain in the system configuration** option for all the devices that were disconnected.
5. Run the diagnostics in system verification mode on the adapter.

Did a failure occur?

NO Go to "Step 0050-12".

YES Go to "Step 0050-3" on page 44.

Step 0050-12

Power off the system. Reconnect the hot-swap devices one at time. After reconnecting each device, follow this procedure:

1. Power on the system.
2. Rerun the diagnostics on the adapter.
3. If the adapter fails, the problem may be with the last device reconnected. Perform these substeps:
   a. Follow repair procedures for that last device.
   b. Rerun diagnostics on the adapter.
   c. If diagnostics fail, replace the SES backplane corresponding to the slot for the device.
   d. Rerun diagnostics.
   e. If diagnostics fail, replace the last device.
   f. Rerun diagnostics on the adapter.
   g. If diagnostics pass, go to Chapter 23, "MAP 0410: Repair Checkout", on page 109. Otherwise, contact your support center.

   Note: A device problem can cause other devices attached to the same SCSI adapter to go into the Defined state. Ask the system administrator to make sure that all devices attached to the same SCSI adapter as the device that you replaced are in the Available state.
4. If no errors occur, the problem could be intermittent. Make a record of the problem. Running the diagnostics for each device on the bus may provide additional information.

Step 0050-13

This step determines if a device other than a hot-swappable device is causing the failure. Follow these steps:

1. Power off the system.
2. Disconnect all devices attached to the adapter (except for the device from which you boot to run diagnostics; you may want to temporarily move this device to another SCSI port while you are trying to find the problem).
3. Power on the system.
4. If the Missing Options menu displays, select the **The resource has been turned off, but should remain in the system configuration** option for all the devices that were disconnected.
5. Run the diagnostics in system verification mode on the adapter.

Did a failure occur?

NO Go to “Step 0050-14”.

YES Go to “Step 0050-4” on page 44.

Step 0050-14

Reconnect the devices one at time. After reconnecting each device, follow this procedure:

1. Rerun the diagnostics in system verification mode on the adapter.
2. If there is a failure, the problem should be with the last device reconnected. Follow the repair procedures for that device, then go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.
3. If no errors occur, the problem could be intermittent. Make a record of the problem. Running the diagnostics for each device on the bus may provide additional information.

Step 0050-15

This step determines if the SCSI Enclosure Services (SES) is the problem. Note that the SES is referred to as the DASD controller in some systems.

Refer to the system or enclosure service guide to determine if the SES (DASD controller) is a FRU that plugs into the backplane or is integrated on the backplane.

Does the SES (DASD controller) plug into the backplane?

NO Go to “Step 0050-18”.

YES Go to “Step 0050-16”.

Step 0050-16

Follow these steps:

1. Power off the system.
2. Remove the SES (DASD controller). Locate the SES (DASD controller) part number under FFC 199.
3. Power on the system.
4. If the Missing Options menu displays, select the **The resource has been turned off, but should remain in the system configuration** option for all the devices that were disconnected.
5. Run the diagnostics in system verification mode on the adapter.

Did a failure occur?

NO Go to “Step 0050-17”.

YES Go to “Step 0050-18”.

Step 0050-17

Follow these steps:

1. Power off the system.
2. Replace the SES (DASD controller).
3. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0050-18

Follow these steps:

1. Power off the system.
2. Disconnect all cables attached to the adapter. For SCSI differential adapters in a high-availability configuration, see “Considerations” on page 43.
3. Power on the system.

4. If the Missing Options menu displays, select the **The resource has been turned off, but should remain in the system configuration** option for all the devices that were disconnected.
5. Run the diagnostics in system verification mode on the adapter.

Did a failure occur?

NO Go to "Step 0050-19".

YES Replace the adapter, then go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Step 0050-19

Follow these steps:

1. Power off the system.
2. Reconnect the cables to the adapter.

Does the SES (DASD controller) plug into the backplane?

NO Go to "Step 0050-20".

YES Go to "Step 0050-21".

Step 0050-20

Follow these steps:

1. Replace the SES (DASD controller). Locate the SES (DASD controller) part number under FFC 199.
2. Power on the system.
3. If the Missing Options menu displays, select the **The resource has been turned off, but should remain in the system configuration** option for all the devices that were disconnected.
4. Run the diagnostics in system verification mode on the adapter.

Did a failure occur?

NO Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

YES Go to "Step 0050-21".

Step 0050-21

One of the cables remaining in the system is defective. Refer to FFC 190 for the cable part numbers. Replace the parts one at time in the order listed. Follow these steps for each FRU replaced:

1. Rerun the diagnostics for the adapter.
2. If there is any failure, continue with the next FRU.
3. If there is no failure, go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Step 0050-22

Follow these steps:

1. Power off the system.
2. Disconnect all cables attached to the adapter (except for the cable to the device from which you boot to run diagnostics; you may want to temporarily move this device to another SCSI port while you are trying to find the problem).
3. Power on the system.
4. If the Missing Options menu displays, select the **The resource has been turned off, but should remain in the system configuration** option for all the devices that were disconnected.
5. Run the diagnostics on the adapter.

Did a failure occur?

NO Go to “Step 0050-23”.

YES Replace the adapter, then go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0050-23

One of the cables remaining in the system is defective. Refer to FFC 190 for the cable part numbers. Replace the parts one at time in the order listed. Follow these steps for each FRU replaced:

1. Rerun the diagnostics for the adapter.
2. If there is any failure, continue with the next FRU.
3. If there is no failure, go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Chapter 9. MAP 0070: 888 Sequence in Operator Panel Display

Purpose of This MAP

An 888 sequence in operator panel display suggests that either a hardware or software problem has been detected and a diagnostic message is ready to be read.

Note: The 888 may or may not be flashing on the operator panel display.

Step 0070-1

Perform the following steps to record the information contained in the 888 sequence message.

1. Wait until the 888 sequence displays.
2. Record, in sequence, every code displayed after the 888. On systems with a 3-digit or a 4-digit operator panel, you may need to press the system's ″reset″ button to view the additional digits after the 888. Stop recording when the 888 digits reappear.
3. Go to "Step 0070-2".

Step 0070-2

Using the first code that you recorded, use the following list to determine the next step to use.

Type 102 Go to "Step 0070-3".

Type 103 Go to "Step 0070-4" on page 52.

Step 0070-3

A Type 102 message generates when a software or hardware error occurs during system execution of an application. Use the following information to determine the content of the type 102 message. Descriptions of the crash codes and the dump status codes are in Chapter 29, "Diagnostics Numbers and Location Codes", on page 191.

The message readout sequence is:
102 = Message type
RRR = Crash code (the three-digit code that immediately follows the 102)
SSS = Dump status code (the three-digit code that immediately follows the Crash code).

Record the Crash code and the Dump Status from the message you recorded in "Step 0070-1". For an explanation of the Dump Status or the Crash Codes, see Chapter 29, "Diagnostics Numbers and Location Codes", on page 191.

Are there additional codes following the Dump Status?

No Go to “Step 0070-5”.

YES The message also has a type 103 message included in it. Go to “Step 0070-4” to decipher the SRN and field replaceable unit (FRU) information in the Type 103 message.

Note: Type 102 messages have no associated SRNs.

Step 0070-4

A Type 103 message generates upon hardware error detection. Use the following steps and information you recorded in “Step 0070-1” on page 51 to determine the content of the Type 103 message.

The message readout sequence is:

103 = Message type
(x)xxx (y)yyy = SRN
(where (x)xxx = the three- or four-digit code following the 103 and (y)yyy is the three- or four-digit code following the (x)xxx code).

1. Record the SRN and FRU location codes from the recorded message.
2. Find the SRN in the Service Request Number List and do the indicated action.

Note: The only way to recover from an 888 type of halt is to turn off the system unit.

Step 0070-5

Perform the following steps:

1. Turn off the system unit power.
2. Turn on the system unit power, and load the online diagnostics in service mode.
3. Wait until one of the following conditions occurs:
   - You are able to load the diagnostics to the point where the Diagnostic Mode Selection menu displays.
   - The system stops with an 888 sequence.
   - The system appears hung.

Is the Diagnostic Mode Selection menu displayed?

No Go to Entry MAP in the system unit service guide.

Yes Go to “Step 0070-6”.

Step 0070-6

Run the **All Resources** options under Advanced Diagnostics in Problem Determination Mode.

Was an SRN reported by the diagnostics?

No This is possibly a software-related 888 sequence. Follow the procedure for reporting a software problem.

Yes Record the SRN and its location code information. Find the SRN in the SRN Listing and do the indicated action.

Chapter 10. MAP 0080: System Bus Problem Isolation

Purpose of This MAP

Use this MAP to analyze a bus problem that does not prevent the system from booting.

Note: Some devices installed in the system may require the loading of supplemental diskettes for diagnostic support.

Step 0080-1

1. Perform a system shutdown and then, if necessary, turn off the system unit power.
2. Locate the diagnostic CD-ROM disc.
3. Turn on the system unit power, and then load the diagnostic CD-ROM disc into the CD-ROM drive.
4. Load the Standalone Diagnostics.
5. Wait until the ″Please Define the System Console″ screen displays or all system activity appears to have stopped.

Is the ″Please Define the System Console″ screen displayed?

No The symptom has changed. Use MAP 1540 in the system unit's service guide.

Yes Go to "Step 0080-2".

Step 0080-2

Follow the displayed instructions until the Installed Resources menu displays.

Are all of the installed PCI adapters listed on the Installed Resources menu?

No Go to "Step 0080-3" on page 54 and make a note of all PCI adapters not listed and their locations.

Yes You may have an intermittent problem. If you think that you have an intermittent problem, go to Chapter 7, "MAP 0040: Intermittent Problem Isolation", on page 41.

Step 0080-3

1. Perform a system shutdown, and then, if necessary, turn off the system unit power.
2. Remove all but one of the PCI adapters that was not listed on the Installed Resources menu.

   Note: If only one adapter is present, do not remove it.
3. Turn on the system unit power, and load standalone diagnostics from the CD-ROM.
4. Wait until the ″Please define the System Console″ screen displays or all system activity appears to have stopped.

Is the ″Please Define the System Console″ screen displayed?

No The symptom has changed. Use MAP 1540 in the system unit's service guide.

Yes Go to "Step 0080-4".

Step 0080-4

Follow the displayed instructions until the Installed Resources menu displays.

Is the adapter that you did not remove shown as an installed resource?

No Record SRN 111-78C and make a note of the adapter you just installed. Look up the SRN in the SRN listings and perform the indicated action.

Yes Go to "Step 0080-5".

Step 0080-5

Have you installed all of the removed adapters?

No Go to "Step 0080-6".

Yes Call your service support structure.

Step 0080-6

1. Perform a system shutdown and then, if necessary, turn off the system unit power.
2. Install one of the remaining removed adapters into its original location.
3. Turn on the system unit power, and load Standalone Diagnostics from the CD-ROM.
4. Wait until the ″Please Define the System Console″ screen displays or all system activity appears to stop.

Is the ″Please Define the System Console″ screen displayed?

No The symptom has changed. Use MAP 1540 in the system unit's service guide.

Yes Go to "Step 0080-7".

Step 0080-7

Follow the displayed instructions until the Installed Resources menu displays.

Is the adapter that you just installed shown as an installed resource?

No Record SRN 111-78C and make a note of the adapter you just installed. Look up the SRN in the SRN listings and perform the indicated action.

Yes Go to "Step 0080-5".

Chapter 11. MAP 0210: General Problem Resolution

Purpose of This MAP

Use this MAP to exchange the FRUs in the order of their failure probability.

Step 0210-1

Read the following information before proceeding.

- Version 4.3.3 and later diagnostics display the part number and the physical location code, if available, on the Problem Report screen. The parts are listed in probability-of-failure order.
- Part numbers display if they are available from vital product data (VPD). If the part number displays, use it in place of the part number in the FFC List. In some cases, the part number provided by the VPD may be incorrect. In that case, use the part number in the FFC list.
- When identifying the location of a planar or a plug-in card, the physical location code may contain the failing FRU's extended location information. For additional information, see "Location Codes for RSPC Model Architecture System Units" on page 206, "Location Codes for CHRP Model Architecture System Units" on page 207, or the system unit's service guide.

Go to "Step 0210-2".

Step 0210-2

Find the failing function codes in the "Failing Function Code List" on page 420, and if not already recorded, record the FRU part number and description of each FRU.

Do you want to exchange this FRU as a hot-plug FRU?

NO Go to "Step 0210-3".

YES Go to Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.

Step 0210-3

1. Referring to "Service Request Number Lists" on page 214, record the SRN source code and the failing function codes in the order of their listing, if not already recorded.
2. Find the failing function codes in the ″Failing Function Code List,″ refer to Chapter 38, "Failing Function Codes (FFCs)", on page 419, and if not already recorded, record the part number and description for each FRU.
3. If the operating system is running, perform the operating system's shutdown procedure (get help if needed).
4. Turn off the system power.

Exchange one of the FRUs (normally the first one listed).

To verify the repair, find the SRN source code that you recorded in the following table. Go to the step indicated in the Action column.

SRN Source Code	Action
A	Go to “Step 0210-8” on page 58.
B	Go to “Step 0210-8” on page 58.
C	Go to “Step 0210-4”.
D	Go to “Step 0210-8” on page 58.
E	Go to “Step 0210-8” on page 58.
F	Go to “Step 0210-8” on page 58.
G	Go to “Step 0210-14” on page 60.
H	Go to “Step 0210-19” on page 61.

Step 0210-4

The following steps handle the problems when the system does not detect a resource.

Note: Use the following substeps for the SRNs having source code: C.

1. Turn on the system power.
2. Load Online Diagnostics in Service Mode (refer to the system’s service guide if needed).
3. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system unit’s service guide.

YES Go to “Step 0210-5” on page 57.

Step 0210-5

1. Press Enter.
2. Select the **Advanced Diagnostics** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
3. When the DIAGNOSTIC MODE SELECTION menu displays, select **System Verification**.

Is the MISSING RESOURCE menu displayed?

NO This completes the repair. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

YES Go to “Step 0210-6”.

Step 0210-6

Look at the failing function codes and the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to “Step 0210-7”.

YES The SRN did not identify the failing FRU. Go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Step 0210-7

1. After performing a shutdown of the operating system, turn off the system unit power.
2. Remove the new FRU and install the original FRU.
3. Exchange the next FRU in the list.
4. Turn on the system unit power.
5. Load the Online Diagnostics in Service Mode. Refer to the system unit service guide if needed.
6. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system’s service guide.

YES Go to “Step 0210-5”, and repeat the steps.

Step 0210-8

Note: Run Online Diagnostics, if possible. If the system planar or battery has been replaced and you are loading diagnostics from a server over a network, it may be necessary for the customer to set the network boot information. The system time and date information should also be set when the repair is completed.

1. Turn on the system power.
2. Load either the Online or Standalone Diagnostics in Service Mode. Refer to the system's service guide if needed.
3. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25 and get a new SRN.

YES Go to "Step 0210-9".

Step 0210-9

1. Press Enter.
2. Select the **Advanced Diagnostics Routines** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
3. If the MISSING RESOURCES menu displays, skip the next step and answer the question below. If it does not display, proceed to the next substep.
4. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.

Is the ADVANCED DIAGNOSTIC SELECTION menu displayed?

NO Go to "Step 0210-15" on page 60.

YES Go to "Step 0210-10" on page 59.

Step 0210-10

Select and run the diagnostics for the FRU you exchanged, and any attached devices to the FRU exchange. If the FRU you exchanged does not appear on the resource selection screen, select `sysplanar0`.

Note: The RESOURCE REPAIR ACTION menu allows a repair action to be logged for the resource being tested. This prevents Error Log Analysis from reporting problems on FRUs that have been replaced. If the RESOURCE REPAIR ACTION menu displays, perform the following:

1. Select the resource that has been replaced from the menu.
2. After all selections have been made, select `Commit` (F7 key).

Did the FRU pass the test?

NO Go to "Step 0210-11".

YES This completes the repair. Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Step 0210-11

Look at the failing function codes and FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to "Step 0210-12".

YES The SRN did not identify the failing FRU. Go to Chapter 6, "MAP 0030: Additional Problem Determination", on page 39.

Step 0210-12

1. After performing a shutdown of the operating system, turn off the system unit power.
2. Remove the new FRU and install the original FRU.
3. Exchange the next FRU in the list.
4. Turn on the system unit power.
5. Load either the Online or Standalone Diagnostics in Service Mode. Refer to the system's service guide if needed.
6. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system's service guide.

YES Go to "Step 0210-13" on page 60.

Step 0210-13

1. Press Enter.
2. Select the **Advanced Diagnostics Routines** option.
3. If the MISSING RESOURCES menu displays, skip the rest of these steps and answer the question below. If it does not display, proceed to the next substep.
4. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.

Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.

Is the ADVANCED DIAGNOSTIC SELECTION menu displayed?

NO Go to "Step 0210-15".

YES Go to "Step 0210-10" on page 59.

Step 0210-14

Every time the **Problem Determination** option is selected from the Diagnostics Mode Selection menu, the error log for the preceding time period is analyzed, and problems are assigned the SRN source: G. Although a FRU may have already been replaced, based on that error log analysis, repeated selection of the **Problem Determination** option continues to reflect the same error for a period of time. The **System Verification** option does not perform error analysis. Ensure that the indicated failing FRU has not been replaced in the previous week.

Has the FRU called out by this SRN been replaced within the past week?

NO Go to "Step 0210-8" on page 58.

YES Disregard this SRN. If the **Problem Determination** option needs to be run, use the operating system's **errclear** command to delete the error log entry for the replaced resource. If more information is needed, see the operating system Commands Reference. Go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25.

Step 0210-15

Is the Missing Resource menu displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25 and get a new SRN.

YES Go to "Step 0210-16".

Step 0210-16

Was on of the missing resources attached to SES, SAF-TE, or DASD backplane?

NO Go to "Step 0210-18" on page 61.

YES Go to "Step 0210-17".

Step 0210-17

A defective backplane may cause phantom devices to appear at specific SCSI addresses. Look through the configuration of SCSI devices attached to the backplane you replaced and verify that the devices shown are actually present in the configuration. If you find any extra SCSI devices that are not present in the system, remove them from the configuration (check with the system administrator to verify the actual configuration of SCSI devices that should be attached to the backplane).

Rerun diagnostics choosing the **Advanced Diagnostics Routines** option.

Do you still have missing resources attached to SES, SAF-TE, or DASD backplane?

NO Go to “Step 0210-24” on page 62.

YES Go to “Step 0210-18”.

Step 0210-18

Follow the displayed instructions. When you finish processing the missing resources, answer the following:

Did you get an SRN?

NO Go to “Step 0210-24” on page 62.

YES Go to “Step 0210-23” on page 62.

Step 0210-19

The following steps handle the problem when the machine stops with an 888 sequence displayed in the operator panel display while it is loading diagnostics.

1. Power on the system and load the Online Diagnostics in Service Mode (refer to the system’s service guide if needed).
2. Wait until one of the following conditions occurs and answer the question.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - An 888 sequence displays in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS displays.

Did the system stop with an 888 sequence in the operator panel display?

NO This completes the repair. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

YES Go to “Step 0210-20”.

Step 0210-20

1. Read out the message in the operator panel display. If needed see Chapter 9, “MAP 0070: 888 Sequence in Operator Panel Display”, on page 51.
2. Find and record the SRN in the message.
3. Find and record the location codes for the FRUs in the message.

Are the SRN and the location codes the same as the SRN you were analyzing?

NO Go to “Step 0210-1” on page 55 and analyze the new SRN.

YES Go to “Step 0210-21”.

Step 0210-21

Look at the failing function codes and FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to “Step 0210-22” on page 62.

YES The SRN did not identify the failing FRU. Go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Step 0210-22

1. Set the power switch on the system unit to Off.
2. Remove the new FRU and install the original FRU.
3. Replace FRU parts in the order the FFCs are listed.
4. Power on the system.
5. Load the Online Diagnostics in Service Mode (refer to the system's service guide if needed).
6. Wait until one of the following conditions occurs and answer the question.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - An 888 sequence displays in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS displays.

Did the system stop with an 888 sequence in the operator panel display?

NO This completes the repair. Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

YES Go to "Step 0210-21" on page 61.

Step 0210-23

Is the SRN the Same as the Original SRN?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25 and get a new SRN.

YES Go to "Step 0210-24".

Step 0210-24

1. Exit the Missing Resources menu.
2. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.
3. Go to "Step 0210-10" on page 59.

Chapter 12. MAP 0220: Hot-Swap FRU Problem Resolution

Purpose of This MAP

Use this MAP to exchange hot-swappable FRUs.

Note: The FRU you want to hot plug might have a defect on it that can cause the hot-plug operation to fail. If, after following the hot- plug procedure, you continue to get an error message that indicates that the hot-plug operation has failed, schedule a time for deferred maintenance when the system containing the FRU can be powered down. Then go to MAP 210, "Step 0210-2" on page 55 and answer NO to the question **Do you want to exchange this FRU as a hot-plug FRU?**.

Attention: If the FRU is a disk drive or an adapter, ask the system administrator to perform any steps necessary to prepare the device for removal.

Step 0220-1

1. If the system displayed a FRU part number on the screen, use that part number to exchange the FRU.

   If there is no FRU part number displayed on the screen, refer to the SRN listing. Record the SRN source code and the failing function codes in the order listed.
2. Find the failing function codes in the FFC listing, and record the FRU part number and description of each FRU.
3. Refer to the removal and replacements procedures in your system's service guide or the *PCI Adapter Placement Reference Guide* to determine if the FRU is hot-swappable.

Does this system unit support hot-swapping of the first FRU listed?

NO Go to MAP 0210.

YES Go to "Step 0220-2".

Step 0220-2

Is the FRU a hot-swap power supply or fan?

NO Go to "Step 0220-4".

YES Go to "Step 0220-3".

Step 0220-3

Note: Refer to the system unit's service guide for removal and replacement procedures.

1. Remove the old FRU.
2. Install the new FRU.
3. Enter the **diag** command.

Go to "Step 0220-14" on page 66.

Step 0220-4

Is the FRU a hot-plug PCI adapter?

NO Go to "Step 0220-5" on page 64.

YES Go to "Step 0220-12" on page 65.

Step 0220-5

Is the FRU a SCSI hot-plug device?

NO Go to “Step 0220-11” on page 65.

YES Go to “Step 0220-6”.

Step 0220-6

Is the hot-plug drive located within a system unit?

NO Go to “Step 0220-8”.

YES Go to “Step 0220-7”.

Step 0220-7

Refer to the system’s service guide in the ″Removing Hot-Plug SCSI Disk Drives″ section under ″Removal and Replacement Procedures″ for information about replacing hot-plug SCSI Disk Drives.

Go to “Step 0220-13” on page 66.

Step 0220-8

Does the hot-plug drive’s enclosure have a system guide with procedures for Removing and Replacing SCSI Disk drives?

NO Go to “Step 0220-9”.

YES If a hot-plug procedure exists, use that procedure to remove the old hot-plug SCSI disk drive and replace it with a new hot-plug SCSI disk drive. Otherwise, if no hot-plug procedure exists, use the existing procedure to remove the old SCSI disk drive and replace it with a new SCSI disk drive. Go to “Step 0220-13” on page 66.

Step 0220-9

1. Ask the customer to back up the data on the drive that you intend to replace onto another drive.
2. Verify that the disk drive is in the Defined state. The amber LED on the hot-plug disk drive should be off.

Is the hot-plug disk drive’s amber LED unlit?

NO Ask the customer to remove the hot-plug disk drive from the operating system configuration (refer them to System Management guide for more information).

YES Go to “Step 0220-10”.

Step 0220-10

Using the Hot-Plug Task service aid described in Chapter 28, “Introducing Tasks and Service Aids”, on page 151, replace the hot-plug drive using the following procedure:

1. Use the **List the SES Devices** option to show the configuration of the hot-plug slots. Identify the slot number of the adapter for the FRU you want to replace.
2. Select the **REPLACE/REMOVE a Device Attached to an SES Device** option.
3. Select the slot which contains the SCSI hot-plug drive you wish to replace. Press Enter. You will see a fast blinking green light on the front on the hot-plug drive indicating that it is ready for removal.

   Note: Refer to service guide for the system unit or enclosure that contains the hot-plug drive for removal and replacement procedures.
4. Remove the old hot-plug drive.

5. Install the new hot-plug drive. Once the hot-plug drive is in place, press Enter.
6. Press the exit key. Wait while configuration is done on the drive, until you see the ″hot-plug task″ on the service aid menu.

Go to “Step 0220-15” on page 66.

Step 0220-11

Using the Hot Plug Task service aid described in Chapter 28, “Introducing Tasks and Service Aids”, on page 151, replace the hot-plug drive using the hot plug RAID service aid:

Note: The drive you wish to replace must be either a SPARE or FAILED drive. Otherwise, the drive would not be listed as an IDENTIFY AND REMOVE RESOURCES selection within the RAID HOT PLUG DEVICES screen. In that case you must ask the customer to put the drive into FAILED state. Refer them to the System Management Guide for more information. Ask the customer to back up the data on the drive that you intend to replace.

1. Select the **RAID HOT PLUG DEVICES** option within the **HOT PLUG TASK** under **DIAGNOSTIC SERVICE AIDS**.
2. Select the RAID adapter that is connected to the RAID array containing the RAID drive you wish to remove, then select **COMMIT**.
3. Choose the **IDENTIFY** option in the IDENTIFY AND REMOVE RESOURCES menu.
4. Select the physical disk which you wish to remove from the RAID array and press Enter.
5. The disk will go into the **IDENTIFY** state, indicated by a flashing light on the drive. Verify that it is the physical drive you wish to remove, then press Enter.
6. At the IDENTIFY AND REMOVE RESOURCES menu, choose the **REMOVE** option and press Enter.
7. A list of the physical disks in the system which may be removed will be displayed. If the physical disk you wish to remove is listed, select it and press Enter. The physical disk will go into the REMOVE state, as indicted by the LED on the drive. If the physical disk you wish to remove is not listed, it is not a SPARE or FAILED drive. Ask the customer to put the drive in the FAILED state before you can proceed to remove it. Refer the customer to the System Management Guide for more information.
8. Refer to service guide for the system unit or enclosure that contains the physical drive for removal and replacement procedures for the following substeps:
   a. Remove the old hot-plug RAID drive.
   b. Install the new hot-plug RAID drive. Once the hot-plug drive is in place, press Enter. The drive will exit the REMOVE state, and will go to the NORMAL state once you exit diagnostics.

      Note: There are no elective tests to run on a RAID drive itself under diagnostics (the drives are tested by the RAID adapter).
9. This completes the repair. Return the system to the customer. Ask the customer to add the physical disk drive to the original configuration within the RAID. Refer them to system management guide for more information.

Step 0220-12

1. Remove the old adapter FRU and install the new adapter FRU. Refer to the ″Replacing a Hot-Pluggable PCI Adapter″ section within the ″Removal and Replacement Procedures″ section of the system service guide.
2. Enter the diag command.
3. Go to the FUNCTION SELECTION menu, and select the Advanced Diagnostics Routines option.
4. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option.
5. Go to “Step 0220-14” on page 66.

Step 0220-13

1. If not already running diagnostics, enter the `diag` command.

   Note: If you are already running service mode diagnostics and have just performed the **Configure Added/Replaced Devices** task (under the SCSI Hot Swap manager of the Hot Plug Task service aid), you must use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS menu before proceeding with the next step, or else the drive might not appear on the resource list.
2. Go to the FUNCTION SELECTION menu, and select the **Advanced Diagnostics Routines** option.
3. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.

Does the hot-plug SCSI disk drive you just replaced appear on the resource list?

NO Verify that you have correctly followed the procedures for replacing hot-plug SCSI disk drives in the system service guide. If the disk drive still does not appear in the resource list, go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55 to replace the resource that the hot-plug SCSI disk drive is plugged in to.

YES Go to “Step 0220-14”.

Step 0220-14

Run the diagnostic test on the FRU you just replaced.

Did the diagnostics run with no trouble found?

NO Go to “Step 0220-15”.

YES Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109. Before returning the system to the customer, if a hot-plug disk has been removed, ask the customer to add the hot-plug disk drive to the operating system configuration. Refer to system management guide for more information.″

Step 0220-15

1. Use the **Log Repair Action** option in the TASK SELECTION menu to update the AIX error log. If the repair action was reseating a cable or adapter, select the resource associated with your repair action. If it is not displayed on the resource list, select **sysplanar0**.

   Note: On systems with a Fault Indicator LED, this changes the Fault Indicator LED from the ″Fault″ state to the ″Normal″ state.
2. While in diagnostics, go to the FUNCTION SELECTION menu. Select the **Advanced Diagnostics Routines** option.
3. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option. Run the diagnostic test on the FRU you just replaced, or **sysplanar0**.

Did the diagnostics run with no trouble found?

NO Go to “Step 0220-16” on page 67.

YES If you changed the Service Processor or Network settings, restore the settings to the value they had prior to servicing the system. If you performed service on a RAID subsystem involving changing of the RAID adapter cache card or changing the configuration on RAID disks, ask the customer to run PCI SCSI Disk Array Manager using smitty to resolve the PCI SCSI RAID Adapter configuration. The following is an example of how the customer would resolve the configuration:

1. At the AIX command line, type `smitty pdam`.
2. On the ″PCI SCSI Disk Array Manager″ screen, select **RECOVERY OPTIONS**.
3. If a previous configuration exists on the replacement adapter, this must be cleared. Select Clear PCI SCSI RAID Adapter Configuration. Press F3.

4. On the ″Recovery Options″ screen, select **RESOLVE PCI SCSI RAID ADAPTER CONFIGURATION**.
5. On the ″Resolve PCI SCSI RAID Adapter Configuration″ screen, select **ACCEPT CONFIGURATION** on **DRIVES**.
6. On the PCI SCSI RAID Adapter selection menu, select the adapter that you changed.
7. On the next screen, press Enter.
8. When you get the ″Are You Sure?″ selection menu, press Enter to continue.
9. You should get an `OK` status message when the recovery is complete. If you get a `Failed` status message, verify that you are doing recovery on the correct adapter, then do this complete procedure. When you complete the recovery, exit smitty to return to the AIX command line.

Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0220-16

Does the original problem persist?

NO If a FRU was replaced, run the Log Repair Action service aid under the Online Diagnostics for the resource that was replaced. If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**. If steps were taken to make the device ready for removal, inform the System Administrator of the steps required to return the system to the original state. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

YES Go to “Step 0220-17”.

Step 0220-17

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to “Step 0220-18”.

YES The SRN did not identify the failing FRU. Schedule a time to run diagnostics in service mode. If the same SRN is reported in service mode, go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Step 0220-18

Note: Before proceeding, remove the FRU you just replaced and install the original FRU in its place.

Does the system unit support hot-swapping of the next FRU listed?

NO Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.

YES The SRN did not identify the failing FRU. Schedule a time to run diagnostics in service mode. If the same SRN is reported in service mode, go to “Step 0220-14” on page 66.

Chapter 13. MAP 0230: Platform Error Problem Resolution

Purpose of This MAP

Use this MAP to resolve problems reported by SRNs A00-000 to A1F-FFF.

Step 0230-1

1. The last character of the SRN is bit-encoded as follows:

```
8   4   2   1
|   |   |   |
|   |   |   Replace all FRUs listed
|   |   Hot-swap is supported
|   Software or Firmware could be the cause
Reserved
```

2. Refer to the last character in the SRN. A 4, 5, 6, or 7 indicates a possible software or firmware problem.

Does the last character indicate a possible software or firmware problem?

NO Go to “Step 0230-4” on page 70.

YES Go to “Step 0230-2”.

Step 0230-2

Ask the customer if any software or firmware has been installed recently.

Has any software or firmware been installed recently?

NO Go to “Step 0230-4” on page 70.

YES Go to “Step 0230-3”.

Step 0230-3

Suspect the new software or firmware.

Check with your support center for any known problems with the new software or firmware.

Are there any known problems with the software or firmware?

NO Go to “Step 0230-4” on page 70.

YES Obtain and follow the procedure to correct the software problem. This completes the repair.

Step 0230-4

Were any FRUs or location code reported with the SRN?

NO Go to “Step 0230-5”.

YES Go to “Step 0230-9”.

Step 0230-5

Run the diagnostics in problem determination mode on **sysplanar0**.

Were there any FRUs reported with the SRN?

NO Go to “Step 0230-6”.

YES Go to “Step 0230-9”.

Step 0230-6

Did the system display: ″Previous Diagnostic Results - Do you want to review the previously displayed error?″

NO Go to “Step 0230-7”.

YES You have a pending item in the error log for which there is no corresponding Log Repair Action. To see this error, select **YES** at the prompt. Information from the error log displays in order of last event first. Record the error code, the FRU names and the location code of the FRUs. Go to “Step 0230-7”.

Step 0230-7

Were there any other SRNs that begin with an A00 to A1F reported?

NO Go to “Step 0230-8”.

YES Go to “Step 0230-1” on page 69 and use the new SRN.

Step 0230-8

Attempt to boot the system on slow boot mode.

If the system boots, run the diagnostics in problem determination mode on **sysplanar0**

Were any new error codes or SRNs reported?

NO Call your support center.

YES Follow the procedure for the new error code or SRN.

Step 0230-9

1. Obtain the list of physical location codes and FRU numbers that were listed on the Problem Report Screen. The list can be obtained by running the `sysplanar0` diagnostics or using the **Display Previous Diagnostic Results** task.
2. Record the physical location codes and FRU numbers.
3. Refer to the last character in the SRN. A 2, 3, 6, or 7 indicates that hot-swap is possible.

Does the last character indicate that hot-swap is possible?

NO Go to “Step 0230-10” on page 71.

YES Go to “Step 0230-14” on page 74.

Step 0230-10

Note: If necessary, refer to the section under ″Reference Information″ in the system service guide ″Powering the system on and off″ for information on system shut down and powering the system on and off.

1. If the operating system is running, perform the operating system's shutdown procedure.
2. Turn off power to the system.
3. Refer to the last character in the SRN. A 1, 3, 5, or 7 indicates that all FRUs listed on the Problem Report Screen need to be replaced. For SRNs ending with any other character, exchange one FRU at a time, in the order listed.

   Note: Use the appropriate procedure under ″Removal and Replacement Procedures″ in the system service guide to replace any FRUs indicated.
4. Turn on power to the system.

   Note: In substep 16, you will be asked to run exercisers. On a partitioned system, if the FRU you replaced contains resources that may be allocated to different partitions (for example, if the FRU is an MCM containing multiple processors, where the processors may be assigned to different partitions) you may wish to also run exercisers on those other partitions containing these resources in addition to running them in the partition that reported the SRN. If you run exercisers in those other partitions, you will need to repeat substeps 5 through 18 of this MAP step for each partition in which you run exercisers.
5. Load Online Diagnostics in service mode (see the system's service guide if needed).

   Note: If the Diagnostics Operating Instructions do not display or you are unable to select the **Task Selection** option, check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25 and get a new SRN.
6. Wait until the **Diagnostics Operating Instructions** are displayed or the system appears to stop.
7. Press Enter.
8. Select **Diagnostic Routines** at the function selection menu.
9. Select **System Verification.**
10. If a missing options exist, particularly if it is related to the device that was replaced, resolve the missing options before proceeding
11. Select the **Task Selection** option.
12. Select the **Log Repair Action** option.
13. Log a repair action for each replaced resource.
14. If the resource associated with your repair action is not displayed on the resource list, select **sysplanar0**.
15. Return to the Task Selection Menu.
16. If the FRU that was replaced was memory, select **Run Exercisers** and run the short exerciser on all the resources, otherwise proceed "Step 0230-15" on page 75.
17. After the exercisers are complete, return to the Task Selection menu.
18. Select **Run Error Log Analysis** and run analysis on all the resources.

Was a problem reported?

NO The repair is complete. Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

YES Go to "Step 0230-11" on page 72.

Step 0230-11

Is the problem the same as the original problem?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 and get a new SRN.

YES Go to “Step 0230-12”.

Step 0230-12

Look at the physical location codes and FRU part numbers you recorded.

Have you exchanged all the FRUs that were listed?

NO Go to “Step 0230-13”.

YES The SRN did not identify the failing FRU. Call your support person for assistance.

Step 0230-13

1. After performing a shutdown of the operating system, turn off power to the system.
2. Remove the new FRU and install the original FRU.
3. Exchange the next FRU in list.
4. Turn on power to the system.

   Note: In substep 16, you will be asked to run exercisers. On a partitioned system, if the FRU you replaced contains resources that may be allocated to different partitions (for example, if the FRU is an MCM containing multiple processors, where the processors may be assigned to different partitions) you may wish to also run exercisers on those other partitions containing these resources in addition to running them in the partition that reported the SRN. If you run exercisers in those other partitions, you will need to repeat substeps 5 through 18 of this MAP step for each partition in which you run exercisers.
5. Load Online Diagnostics in service mode (see the system’s service guide if needed).

   Note: If the Diagnostics Operating Instructions do not display or you are unable to select the **Task Selection** option, check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 and get a new SRN.
6. Wait until the Diagnostics Operating Instructions are displayed or the system appears to stop.
7. Press Enter.
8. Select **Diagnostic Routines** at the function selection menu.
9. Select **System Verification.**
10. If a missing options exist, particularly if it is related to the device that was replaced, resolve the missing options before proceeding
11. Select the **Task Selection** option.
12. Select the **Log Repair Action** option.
13. Log a repair action for each replaced resource.
14. If the resource associated with your action does not appear on the Resource List, select **sysplanar0**.
15. Return to the Task Selection Menu.
16. If the FRU that was replaced was memory, select **Run Exercisers** and run the short exerciser on all the resources, otherwise proceed “Step 0230-15” on page 75.
17. After the exercisers are complete, return to the Task Selection Menu.
18. Select **Run Error Log Analysis** and run analysis on all the resources.

Was a problem reported?

NO The repair is complete. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

YES Go to “Step 0230-11” on page 72.

Step 0230-14

The FRUs can be hot-swapped. If you do not want to use the hot-swap, go to “Step 0230-10” on page 71.

Note: See the hot-swap procedures in the ″Removal and Replacement″ section of your system unit’s service guide.

1. Refer to the last character in the SRN. A 1, 3, 5, or 7 indicates that all FRUs listed on the Problem Report Screen must be replaced. For SRNs ending with any other character, exchange one FRU at a time, in the order listed.

   Note: In substep 9, you will be asked to run exercisers. On a partitioned system, if the FRU you replaced contains resources that may be allocated to different partitions (for example, if the FRU is an MCM containing multiple processors, where the processors may be assigned to different partitions) you may wish to also run exercisers on those other partitions containing these resources in addition to running them in the partition that reported the SRN. If you run exercisers in those other partitions, you will need to repeat substeps 2 through 10 of this MAP step for each partition in which you run exercisers.

2. If available, use the CE Login and enter the **diag** command.

   Note: If CE Login is not available, have the system administrator enter superuser mode and then enter the **diag** command.

3. After the Diagnostics Operating Instructions display, press Enter.
4. Select the **Task Selection** option.
5. Select the **Log Repair Action** option.
6. If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.
7. Log a repair action for each replaced resource.
8. Return to the Task Selection menu.
9. Select **Run Exercisers** and run the short exerciser on all resources.
10. Use the **Log Repair Action** option in the Task Selection menu to update the AIX error log. If the repair action was reseating a cable or adapter, select the resource associated with your repair action. If it is not displayed on the resource list, select **sysplanar0**.

    Note: On systems with a Fault Indicator LED, this changes the Fault Indicator LED from the ″fault″ state to the ″normal″ state.

Was a problem reported?

NO The repair is completed. Return the system to the customer.

YES Go to “Step 0230-15” on page 75.

Step 0230-15

Is the problem the same as the original problem?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 and get a new SRN.

YES Go to “Step 0230-16”.

Step 0230-16

Look at the physical location codes and FRU part numbers you recorded.

Have you exchanged all the FRUs that were listed?

NO Go to “Step 0230-17”.

YES The SRN did not identify the failing FRU. Call your support person for assistance.

Step 0230-17

1. Remove the new FRU and install the original FRU.
2. Exchange the next FRU in the list.

   Note: In substep 8, you will be asked to run exercisers. On a partitioned system, if the FRU you replaced contains resources that may be allocated to different partitions (for example, if the FRU is an MCM containing multiple processors, where the processors may be assigned to different partitions) you may wish to also run exercisers on those other partitions containing these resources in addition to running them in the partition that reported the SRN. If you run exercisers in those other partitions, you will need to repeat substeps 3 through 10 of this MAP step for each partition in which you run exercisers.
3. Return to the Task Selection Menu.
4. Select the **Log Repair Action** option.
5. Log a repair action for each replaced resource.
6. If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.
7. Return to the Task Selection Menu.
8. Select **Run Exercisers** and run the short exercisers on all resources.
9. After the exercisers are complete, return to the Task Selection Menu.
10. Select **Run Error Log Analysis** and run analysis on all exchanged resources.

Was a problem reported?

NO The repair is complete. Return the system to the customer.

YES Go to “Step 0230-15”.

Chapter 14. MAP 0235: System Array Self-Repair Problem Resolution

Purpose of This MAP

Use this MAP to resolve problems reported by SRNS A11-560 to A11-580.

Note: The following steps may require that the system be rebooted to invoke Array bit steering, so you may wish to schedule deferred maintenance with the system administrator to arrange a convenient time to reboot their system.

Step 0235-1

Was the SRN A11-560?

NO Go to “Step 0235-3”.

YES Go to “Step 0235-2”.

Step 0235-2

Logged in as root or using CE Login, at the AIX command line type `diag` then press enter. Use the **Log Repair Action** option in the TASK SELECTION menu to update the AIX error log. Select `sysplanar0`.

Note: On systems with fault indicator LED, this changes the fault indicator LED from the FAULT state to the NORMAL state.

Were there any other errors on the resource reporting the array bit steering problem?

NO Go to “Step 0235-4” on page 78.

YES Resolve those errors before proceeding.

Step 0235-3

Logged in as root or using CE Login, at the AIX command line type `diag` then press enter. Use the **Log Repair Action** option in the TASK SELECTION menu to update the AIX error log. Select `procx`, where x is the processor number of the processor that reported the error.

Note: On systems with fault indicator LED, this changes the fault indicator LED from the FAULT state to the NORMAL state.

Were there any other errors on `procx`?

NO Go to “Step 0235-4” on page 78.

YES Resolve those errors before proceeding.

Step 0235-4

Schedule deferred Maintenance with the customer. When it is possible, reboot the system to invoke Array Bit steering

Go to “Step 0235-5”.

Step 0235-5

After the system has been rebooted, log in as root or use CE Login. At the AIX command line, run diagnostics in problem determination mode to determine if the array bit steering was able to correct the problem.

If diagnostics are not run (for instance, if the system returns to **Resource Selection** menu after running diagnostics in problem determination mode) or there is no problem on the resource that originally reported the problem, then array bit steering was able to correct the problem. Exit this MAP and go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

If a problem is reported, use the SRN to resolve the problem. Go to the Chapter 3, “Fast Path MAP”, on page 15 with this symptom.

Chapter 15. MAP 0240: Memory Problem Resolution

Purpose of This MAP

This MAP handles memory problems.

Step 0240-1

1. If the system displayed a FRU part number on the screen, use that part number to exchange the FRU.

   If there was no FRU part number displayed on the screen, find your SRN in the “Service Request Number List” on page 215.
2. Record the SRN source code and the failing function codes in the order of their listing.
3. Find the function codes in the “Failing Function Code List” on page 420 and record the part number and description for each FRU.
4. If the operating system is running, perform the operating system’s shutdown procedure (get help if needed).
5. Turn off the system power.

Exchange the first FRU listed.

Notes:

1. If more than one memory module is listed, replace all the listed memory modules simultaneously.
2. If the SRN table lists multiple FRUs, (other than memory modules) exchange the FRUs one at a time based on the order listed. If an exchanged FRU does not fix the problem, reinstall the original FRU, and then replace the next FRU listed when directed by the MAPs.

Go to “Step 0240-2”.

Step 0240-2

1. Turn off the system power.
2. Load either the Online or Standalone Diagnostics in Service Mode (refer to the system’s service guide if needed).
3. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system unit’s service guide.

YES Go to “Step 0240-3” on page 80.

Step 0240-3

1. Press Enter.
2. When the FUNCTION SELECTION menu is displayed, select the **Advanced Diagnostics** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
3. When the DIAGNOSTIC MODE SELECTION menu is displayed, select the **System Verification** option.
4. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, select the **sysplanar0** option. If the RESOURCE SELECTION MENU is displayed, select **Memory test**.

Did the system respond with the message: ″Previous Diagnostics Results. Do you want to review the previously displayed error″?

NO Go to “Step 0240-4”.

YES You have a pending item in the error log for which there is no corresponding ″Log Repair Action″.

To see this error, select `Yes` at the prompt.

Information from the error log is displayed in order of last event first. Record the error code, the FRU names, and the location code of the FRUs.

Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25, following actions for ″Previous Diagnostics Results″

Step 0240-4

Did the test pass?

NO Go to “Step 0240-5”.

YES This completes the repair. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0240-5

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to “Step 0240-6”.

YES Go to “Step 0240-8” on page 81.

Step 0240-6

1. After performing a system shutdown, turn off the system power.
2. Remove the new FRU and install the original FRU.
3. Exchange the next FRU in the list. If more than one memory module is listed, replace all of the memory modules simultaneously.
4. Turn on the system power.
5. Load either the Online or Standalone Diagnostics in Service Mode (refer to the system unit’s service guide if needed).
6. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system unit’s service guide.

YES Go to “Step 0240-7” on page 81.

Step 0240-7

1. Press Enter.
2. When the Function Selection menu is displayed, select the **Advanced Diagnostics** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
3. Select the **Advanced Diagnostics** option.
4. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.
5. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, select the **sysplanar0** option. If the RESOURCE SELECTION MENU is displayed, select **Memory test**.

Did the test pass?

NO Go to “Step 0240-5” on page 80, and repeat the steps.

YES This completes the repair. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0240-8

Look at the FRU descriptions you recorded for this SRN.

Is the only FRU identified by this SRN a memory module?

NO The SRN did not identify the failing FRU. Call your support person.

YES Go to “Step 0240-9”.

Step 0240-9

1. After performing a shutdown, turn off the system power.
2. Exchange the planar or memory card that contains the memory module.
3. Turn on the system power.
4. Load either the Online or Standalone Diagnostics in Service Mode (refer to the system unit’s service guide if needed).
5. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system unit’s service guide.

YES Go to “Step 0240-10” on page 82.

Step 0240-10

1. Press Enter.
2. When the Function Selection menu is displayed, select the **Advanced Diagnostic** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
3. When the DIAGNOSTIC MODE SELECTION menu is displayed, select the **System Verification** option.
4. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, select the **sysplanar0** option. If the RESOURCE SELECTION MENU is displayed, select **Memory test**.

Did the test pass?

NO The SRN did not identify the failing FRU. Call your support person.

YES This completes the repair. Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Chapter 16. MAP 0250: Unexpected System Halts During Diagnostics

Purpose of This MAP

This MAP handles unexpected system halts that occur while running the diagnostic programs. Go to “Step 0250-1”.

Step 0250-1

The last three or four digits of the SRN following the dash (-) match a failing function code number. Refer to “Failing Function Code List” on page 420 and find the failing function code that matches the last three digits of your SRN. Record the FRU part number and description.

Does this system unit contain only one of this kind of FRU?

NO Go to “Step 0250-2”.

YES Go to “Step 0250-3”.

Step 0250-2

One of the multiple FRUs of this kind is defective.

Remove this kind of FRU one at a time. Test the system unit after each FRU is removed. When the test is successful or all FRUs of this kind have been removed.

Were you able to identify a failing FRU?

NO Contact your service support structure.

YES Go to “Step 0250-3”.

Step 0250-3

1. Turn off the system unit power.
2. Exchange the FRU identified in “Step 0250-2” or the FRU identified by the last three or four digits of the SRN following the dash (-).
3. Turn on the system power.
4. Load either the Online or Standalone Diagnostics in Service Mode (refer to the system unit’s service guide if needed).
5. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO The symptom changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to the system unit's service guide.

YES Go to "Step 0250-4".

Step 0250-4

1. Press Enter.
2. When the FUNCTION SELECTION menu is displayed, select the **Advanced Diagnostics** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
3. When the DIAGNOSTIC MODE SELECTION menu is displayed, select the **System Verification** option.

Did the ADVANCED DIAGNOSTIC SELECTION menu display?

NO The symptom changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25 and get a new SRN.

YES Go to "Step 0250-5".

Step 0250-5

Run diagnostics on the FRU that you exchanged.

Did the FRU pass the test?

NO Contact your support person.

YES This completes the repair. Go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Chapter 17. MAP 0260: System Hangs During Resource Configuration

Purpose of This MAP

This MAP handles problems when the system unit hangs while configuring a resource.

Step 0260-1

The last three or four digits of the SRN following the dash (-) match a failing function code number.

Look at the “Failing Function Code List” on page 420 and find the failing function code that matches the last three or four digits of your SRN, following the dash. Record the FRU part number and description (use the first FRU part listed when multiple FRUs are listed).

The physical location code, AIX location code, or device name displays on system units with multiple-line LCD operator panel display if AIX 4.3.3 or higher operating system is installed.

Do you have either a physical location code or AIX location code displayed?

NO Go to “Step 0260-4” on page 86.

YES Go to “Step 0260-2”.

Step 0260-2

Are there any FRUs attached to the device described by the physical location code or AIX location code?

No Go to “Step 0260-6” on page 86

Yes Go to “Step 0260-3”

Step 0260-3

Remove this kind of FRU attached to the device described in the location code one at a time. Note whether the system still hangs after each device is removed. Do this until you no longer get a hang, or all attached FRUS have been removed from the adapter or device.

Has the symptom changed?

No Go to “Step 0260-6” on page 86

Yes Use the location code of the attached device that you removed when the symptom changed, and go to“Step 0260-6” on page 86.

Step 0260-4

Does your system unit contain only one of this kind of FRU?

NO Go to “Step 0260-5”.

YES Go to “Step 0260-6”.

Step 0260-5

One of the FRUs of this kind is defective.

Remove this kind of FRU one at a time. Test the system unit after each FRU is removed. When the test completes successfully or when you have removed all of the FRUs of this kind.

Were you able to identify a failing FRU?

NO Go to MAP 1540 in the service guide for this system unit.

YES Go to “Step 0260-6”.

Step 0260-6

1. Turn off the system unit.
2. Exchange the FRU identified by the location code or “Step 0260-5”.

Is this system capable of running online diagnostics in Service Mode?

NO Go to “Step 0260-7”.

YES Go to “Step 0260-8”.

Step 0260-7

1. Turn on the system unit.
2. Load the Standalone diagnostics (if needed, refer to the Service Guide).
3. Wait until the Diagnostic Operating Instructions display or the system appears to have stopped.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to “Step 0260-9”.

YES Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0260-8

1. Turn on the system unit.
2. Load the Online Diagnostics in Service Mode (if needed, refer to the Service Guide).
3. Wait until the Diagnostic Operating Instructions display or the system appears to have stopped.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to “Step 0260-9”.

YES Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0260-9

Look at the operator panel display.

Is the number displayed the same as the last three or four digits after the dash (-) of your SRN?

NO The symptom changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25 and get a new SRN.

YES Go to “Step 0260-10”.

Step 0260-10

Was the FRU you exchanged an adapter or a planar?

NO Go to “Step 0260-11”.

YES Go to MAP 1540 in the service guide for this system unit.

Step 0260-11

Was the FRU you exchanged a device?

NO Go to MAP 1540 in the service guide for this system unit.

YES Go to “Step 0260-12”.

Step 0260-12

The adapter for the device may be causing the problem.

1. Turn off the system unit.
2. Exchange the adapter for the device.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.
3. Turn on the system unit. If `c31` is displayed, follow the displayed instructions to select a console display.
4. Load the Online Diagnostics in Service Mode (if needed, refer to the service guide).
5. Wait until the DIAGNOSTIC OPERATING INSTRUCTIONS display or the system appears to have stopped.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in the service guide for this system unit.

YES Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Chapter 18. MAP 0270: SCSI RAID Problem Resolution and Verification

Purpose of This MAP

Use this MAP to Resolve SCSI RAID Adapter, Cache, or drive problems.

Note: This MAP assumes that the RAID adapter and drive microcode is at the correct level. To check microcode level, see “SCSI RAID Descriptions and Diagnostic Procedures” on page 146.

Attention: If the FRU is a disk drive or an adapter, ask the system administrator to perform any steps necessary to prepare the device for removal.

Step 0270-1

1. If the system displayed a FRU part number on the screen, use that part number. If there is no FRU part number displayed on the screen, refer to the SRN listing. Record the SRN source code and the failing function codes in the order listed.
2. Find the failing function codes in the FFC listing, and record the FRU part number and description of each FRU.

Go to “Step 0270-2”.

Step 0270-2

Is the FRU a RAID drive?

NO Go to “Step 0270-6” on page 91.

YES Go to “Step 0270-3” on page 90.

Step 0270-3

If the RAID drive you want to replace is not already in the **failed** state, then ask the customer to run the **PCI SCSI Disk Array Manager** using **smit** to fail the drive that you wish to replace. An example of this procedure is:

1. Login as root.
2. Type `smit pdam`.
3. Select **Fail a Drive in a PCI SCSI Disk Array**.
4. Select the appropriate disk array by placing the cursor over that array and press Enter.
5. Select the appropriate drive to fail based on the Channel and ID called out in diagnostics.
6. The **Fail a Drive** screen will appear. Verify that you are failing the correct drive by looking at the Channel ID row. Press Enter when verified correct. Press Enter again.
7. Press **F10** and type `smit pdam`
8. Select ″**Change/Show PCI SCSI RAID Drive Status -> Remove a Failed Drive**
9. Select the drive that just failed.

Go to “Step 0270-4”.

Step 0270-4

Using the Hot Plug Task service aid described in “Hot Plug Task” on page 176, replace the RAID drive using the RAID HOT PLUG DEVICES service aid:

Note: The drive you wish to replace must be either a SPARE or FAILED drive. Otherwise, the drive would not be listed as an IDENTIFY AND REMOVE RESOURCES selection within the RAID HOT PLUG DEVICES screen. In that case you must ask the customer to put the drive into FAILED state. Refer them to the *System Management Guide* for more information.

1. Select the RAID HOT PLUG DEVICES option within the HOT PLUG TASK under DIAGNOSTIC SERVICE AIDS.
2. Select the RAID adapter that is connected to the RAID array containing the RAID drive you wish to remove, then select COMMIT.
3. Choose the IDENTIFY option in the IDENTIFY AND REMOVE RESOURCES menu.
4. Select the physical disk which you wish to remove from the RAID array and press Enter.
5. The disk will go into the IDENTIFY state, indicated by a flashing light on the drive. Verify that it is the physical drive you wish to remove, then press Enter.
6. At the IDENTIFY AND REMOVE RESOURCES menu, choose the REMOVE option and press Enter.
7. A list of the physical disks in the system which may be removed will be displayed. If the physical disk you wish to remove is listed, select it and press Enter. The physical disk will go into the REMOVE state, as indicted by the LED on the drive. If the physical disk you wish to remove is not listed, it is not a SPARE or FAILED drive. Ask the customer to put the drive in the FAILED state before you can proceed to remove it. Refer the customer to the *System Management Guide* for more information.
8. Refer to *Service Guide* for the system unit or enclosure that contains the physical drive for removal and replacement procedures for the following substeps:
   a. Remove the old hot-plug RAID drive.
   b. Install the new hot-plug RAID drive. Once the hot-plug drive is in place, press Enter. The drive will exit the REMOVE state, and will go to the NORMAL state once you exit diagnostics.

      Note: There are no elective tests to run on a RAID drive itself under diagnostics (the drives are tested by the RAID adapter).

Go to “Step 0270-5” on page 91.

Step 0270-5

If the RAID did not begin reconstructing automatically, then perform the steps that follow.

Adding a Disk to the RAID array and Reconstructing:

Ask the customer to run the PCI SCSI Disk Array Manager using **smit**. An example of this procedure is:

1. Login as root.
2. Type `smit pdam`.
3. Select **Change/Show PCI SCSI RAID Drive Status**.
4. Select **Add a Spare Drive**.
5. Select the appropriate adapter.
6. Select the Channel and ID of the drive which was replaced.
7. Press Enter when verified.
8. Press **F3** until you are back at the **Change/Show PCI SCSI RAID Drive Status** screen.
9. Select **Add a Hot Spare**.
10. Select the drive you just added as a spare.
11. If there was no hot spare previously installed in the array, then the array will begin reconstructing immediately. Reconstruction time will vary based on the size of the RAID array. Allow 1-2 hours for completion.

To check the progress of the reconstruction:

1. Login as root.
2. Type `smit pdam`.
3. Select **List PCI SCSI RAID Arrays**.
4. Choose the array containing the drive you replaced.
   If the state of the RAID Array is `reconstructing` then it is in process of reconstructing. If it is `optimal`, then reconstruction has completed.
5. Press **F10** to exit.

Go to “Step 0270-17” on page 93.

Step 0270-6

Is the FRU a RAID adapter base card, RAID adapter cache card, or RAID adapter battery?

NO Go to “Step 0270-15” on page 93.

YES Go to “Step 0270-7”.

Step 0270-7

Do you want to change the FRU using a hotplug operation?

No Power down the system, and remove the RAID adapter, if necessary refer to the Removal and Replacement Procedures section of the system *Service Guide*. Go to “Step 0270-8”.

Yes Remove the RAID adapter, if necessary refer to the **Replacing a Hot-Pluggable PCI Adapter** within the Removal and Replacement Procedures section of the system *Service Guide*. Go to “Step 0270-8”.

Step 0270-8

Is the FRU you want to replace a RAID adapter cache card or RAID adapter battery?

NO Go to “Step 0270-10” on page 92.

YES Go to “Step 0270-9”.

Step 0270-9

Replace the FRU onto the existing base card.

Go to “Step 0270-11”.

Step 0270-10

After physically removing the base card from the system, remove any other good FRUs (RAID cache card or cache battery) from the RAID base card adapter. Plug these FRUs on to the replacement RAID base card adapter FRU.

Go to “Step 0270-11”.

Step 0270-11

Did you change the FRU using a hotplug operation?

No Install the RAID adapter assembly into the system, if necessary, refer to the Removal and Replacement Procedures section of the system *Service Guide*. Power up the system and login to AIX. Go to “Step 0270-12”.

Yes Install the RAID adapter assembly into the system. If needed, refer to the **Replacing a Hot-Pluggable PCI Adapter** section within the Removal and Replacement Procedures section of the system *Service Guide*. Go to “Step 0270-12”.

Step 0270-12

Was the replacement FRU a RAID base card?

No NO Go to “Step 0270-14” on page 93.

Yes Go to “Step 0270-13”.

Step 0270-13

Attention: Prior to cabling the SCSI RAID adapter to the subsystem check for pre-existing configurations on the replacement SCSI RAID Base Card. The replacement base card can overwrite your system’s configuration data if it already has a configuration written to it! Check it before cabling up the SCSI RAID Subsystem Array.

Ask to customer to check for pre-existing configuration on the SCSI RAID Base Card. Below is an example of this procedure:

1. Login as root (if not already root).
2. Type `smit pdam`.
3. Select **List PCI SCSI RAID Arrays**.
4. If no RAID Arrays are listed, then there are no preexisting configurations on the base card.
5. Press **F10** key to exit

If a pre-existing configuration exists on the base card, ask the customer to run the PCI SCSI Disk Array Manager using **smitty**.

1. Login as root (if not already root)
2. Type `smit pdam` from the AIX Command prompt (if not already in the RAID manager)
3. Select **Recovery Options**
4. Select **Clear PCI SCSI RAID Adapter Configuration**. Select the adapter which you just installed. Press Enter″ to confirm.

5. Return to the **Recovery Options** menu (if not already there). Select **Resolve PCI SCSI RAID Adapter Configuration**. Select **Accept Configuration on Drives**. Select the adapter which you just installed. Press Enter to confirm. The configuration on the new adapter should now match the configuration existent on the drives.
6. Press **F10** to exit

You may now proceed to cable up the RAID system array.

Go to “Step 0270-16”.

Step 0270-14

Ask the customer to resynchronize the RAID Array configuration. Below is an example of this procedure:

1. Log in as root (if not already root).
2. Type `smit pdam`.
3. Select **Recovery Options**.
4. Select Resolve **PCI SCSI RAID Adapter Configuration**.
5. Select **Retry Current Configuration**.
6. Select the appropriate scraid adapter.
7. A message will be displayed as to the success of the operation.
8. Press **F10** to exit.

Go to “Step 0270-16”.

Step 0270-15

Other RAID FRUs require that the system be shut down prior to replacement.

1. If the operating system is running, perform the operating system shutdown procedure (get help if needed).
2. Turn off the system power.
3. Replace the FRU indicated by the FFC.

Go to “Step 0270-16”.

Step 0270-16

Run the diagnostics in system verification mode on the RAID subsystem.

Did the diagnostics run with no trouble found?

No Go to “Step 0270-18” on page 94.

Yes Go to “Step 0270-17”.

Step 0270-17

1. Use the **Log Repair Action** option in the TASK SELECTION menu to update the AIX error log. Select **scraid**X (where X is the RAID adapter number of the RAID subsystem you’ve been working on).

   Note: On systems with Fault Indicator LED, this changes the Fault Indicator LED from the **Fault** state to the **Normal** state.
2. While in diagnostics, go to the FUNCTION SELECTION menu. Select the **Advanced Diagnostics Routines** option.
3. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option. Run the diagnostic test on **scraid**X (where *X* is the RAID adapter number).

Did the diagnostics run with no trouble found?

NO Go to the “Step 0270-18”.

YES If you changed the Service Processor or Network settings, restore the settings to the value they had prior to servicing the system. If the system you are servicing has a hardware management console (HMC) with service focal point (SFP) go to the **End of Call MAP for systems with Service Focal Point** in the system *Service Guide*.

This completes the repair, return the system to the customer.

Step 0270-18

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to “Step 0270-19”.

YES The SRN did not identify the failing FRU. Schedule a time to run diagnostics in service mode. If the same SRN is reported in service mode, go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Step 0270-19

Note: Note: Before proceeding, remove the FRU you just replaced and install the original FRU in it’s place.

Use the next FRU on the list and go to “Step 0270-2” on page 89.

Chapter 19. MAP 0280: Boot Problem Resolution

Purpose of This MAP

Use this MAP to handle problems caused during booting of the system unit.

Entry Table	
Entry 1	Go to “Step 0280-1”.
Entry 2	Go to “Step 0280-2”.
Entry 3	Go to “Step 0280-3” on page 96.

Step 0280-1

The system fails to respond to keyboard entries.

This problem is most likely caused by a faulty keyboard, keyboard adapter, or keyboard cable.

Try the FRUs in the order listed below: (Test each FRU by retrying the failing operation.)

1. Keyboard
2. Keyboard adapter (normally located on the system board)
3. Keyboard cable (if not included with the keyboard)

Were you able to resolve the problem?

No Go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Yes Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0280-2

1. Some systems have a graphic adapter POST. Check your system guide for information about graphic adapter POSTs. If a graphic adapter POST is supported and it indicates a failure, follow the procedures in the system guide to resolve the problem.
2. If a graphic adapter POST is supported and it does not indicate a failure, suspect the display or display cable.
3. If the system does not have a graphic adapter POST, go to the display problem determination procedures. If you do not find a problem, replace the graphics adapter.

Were you able to resolve the problem?

No Go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Yes Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0280-3

Go to the problem determination procedure for the terminal. If you do not find a problem, suspect the serial port adapter or terminal cable.

Were you able to resolve the problem?

No Call your support person.

Yes Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Chapter 20. MAP 0285: Multipath I/O (MPIO) Problem Resolution

Purpose of This MAP

Use this MAP to handle SRN A23-001 and ssss-640 (where ssss is the 3 or 4 digit FFC of an SCSD drive) to check the path from adapter to device.

Note: Not all devices support MPIO. Before proceeding with this MAP, make sure that the devices on both ends of the missing path support MPIO.

Step 0285-1

Look at the problem report screen for the missing path. After the resource name and FRU, the next column identifies the missing path between resources (for example, `scsi0 -> hdisk1`). This indicates the missing path between the two resources, `scsi0` (the parent resource) and `hdisk1` (the child resource).

Is the cabling present between the two resouces?

No Go to "Step 0285-2".

Yes Go to "Step 0285-4" on page 98.

Note: In the following MAP steps, if no path previously existed between a parent and child device, the child device will have to be changed from the ″defined″ to the ″available″ state, otherwise you will be unable to select the child device to which you want to establish a path.

Step 0285-2

1. Power off the system.
2. Connect the proper cable between the two resources.
3. Power on the system, rebooting AIX.
4. At the AIX command line, type `smitty mpio`.
5. Choose **MPIO Path Management**.
6. Select **Enable Paths**.
7. Select **Enable Paths for a Device**.
8. In the **Device Name** selection, choose the name of the child device (the device at the end of the path).
9. In the **Paths to Enable** selection, select the missing path (between the parent and child device).
10. Press Enter.

Did the smitty menu complete with no errors?

No Go to "Step 0285-4" on page 98.

Yes Go to "Step 0285-3" on page 98.

Step 0285-3

To verify that the device path is present, rerun `diag -a`.

When the resource list displays, select the child resource that had the missing path. If the letter `P` is shown in front of the resource, you still have a path problem. If no letter `P` is shown in front of the resource or if the system returns to the command prompt or you get a message without the resource list being displayed, then the problem has been resolved.

Do you still have a path problem?

No Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Yes Go to “Step 0285-4”.

Step 0285-4

1. Power off the system.
2. Reseat the cables between the device and the adapter that have the missing path.
3. Power on the system, rebooting AIX.
4. At the AIX command line, type `smitty mpio`.
5. Choose **MPIO Path Management**.
6. Select **Enable Paths**.
7. Select **Enable Paths for a Device**.
8. In the **Device Name** selection, choose the name of the child device (the device at the end of the path).
9. In the **Paths to Enable** selection, select the missing path (between the parent and child device).
10. Press enter.

Did the smitty menu complete with no errors?

No Go to “Step 0285-6”.

Yes Go to “Step 0285-5”.

Step 0285-5

To verify that the device path is present, rerun `diag -a`..

When the resource list displays, select the child resource that had the missing path. If the letter `P` is shown in front of the resource, you still have a path problem. If no letter `P` is shown in front of the resource or if the system returns to the command prompt or you get a message without the resource list being displayed, then the problem has been resolved.

Do you still have a path problem?

No Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Yes Go to “Step 0285-6”.

Step 0285-6

You may have a problem with the driver interface or connector on either the parent or child device.

1. Power off the system (refer to the system service guide if necessary).
2. Remove the cables to the parent device.
3. Replace the cable(s) that go between the parent and child device (if present).
4. Reattach the cables to the parent device.

5. Power on the system, rebooting AIX (refer to the system service gide if necessary).
6. At the AIX command line, type `smitty mpio`.
7. Choose **MPIO Path Management**.
8. Select **Enable Paths**.
9. Select **Enable Paths for a Device**.
10. In the **Device Name** selection, choose the name of the child device (the device at the end of the path).
11. In the **Paths to Enable** selection, select the missing path (between the parent and child device).
12. Press enter.

Did the smitty menu complete with no errors?

No Go to “Step 0285-7”.

Yes Go to “Step 0285-8”.

Step 0285-7

To verify that the device path is present, rerun `diag -a`.

When the resource list displays, select the child resource that had the missing path. If the letter P is shown in front of the resource, you still have a path problem. If the letter P is not shown in front of the resouce, or if the system returns to the command prompt, or you get a message without the resource list being displayed, then the problem has been resolved.

Do you still have a problem?

No Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Yes Go to “Step 0285-8”.

Step 0285-8

You may have a problem with the driver interface or connector on either the parent or child device.

1. Power off the system.
2. Remove the cables to the parent device.
3. Replace the parent device.
4. Reattach the cables to the parent device.
5. Power on the system, rebooting AIX.
6. At the AIX command line, type `smitty mpio`.
7. Choose **MPIO Path Management**.
8. Select **Enable Paths**.
9. Select **Enable Paths for a Device**.
10. In the **Device Name** selection, choose the name of the child device (the device at the end of the path).
11. In the **Paths to Enable** selection, select the missing path (between the parent and child device).
12. Press enter.

Did the smitty menu complete with no errors?

No Go to “Step 0285-9” on page 100.

Yes Go to “Step 0285-10” on page 100.

Step 0285-9

To verify that the device path is present, rerun `diag -a`.

When the resource list displays, select the child resource that had the missing path. If the letter `P` is shown in front of the resource, you still have a path problem. If no letter `P` is shown in front of the resource or if the system returns to the command prompt or you get a message without the resource list being displayed, then the problem has been resolved.

Do you still have a path problem?

No Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Yes Go to “Step 0285-10”.

Step 0285-10

You may have a problem with the driver interface or connector on the child device.

1. Power off the system.
2. Remove the cables to the child device.
3. Replace the child device (in the case of a SCSI or SAF-TE backplane, replace the backplane first, followed by the child device)..
4. Reattach the cables to the child device.
5. Power on the system, rebooting AIX.
6. At the AIX command line, type `smitty mpio`.
7. Choose **MPIO Path Management**.
8. Select **Enable Paths**.
9. Select **Enable Paths for a Device**.
10. In the **Device Name** selection, choose the name of the child device (the device at the end of the path).
11. In the **Paths to Enable** selection, select the missing path (between the parent and child device).
12. Press enter.

Did the smitty menu complete with no errors?

No Neither the cabling, nor the parent, nor the child seem to be causing the problem. Contact your service support.

Yes Go to “Step 0285-11”.

Step 0285-11

Rerun `diag -a` to verify that the device path is present.

When the resource list displays, select the child resource that had the missing path. If the letter `P` is shown in front of the resource, you still have a path problem. If no letter `P` is shown in front of the resource or if the system returns to the command prompt or you get a message without the resource list being displayed, then the problem has been resolved.

Do you still have a path problem?

No Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Yes Neither the cabling, nor the parent, nor the child seem to be causing the problem. Contact your service support.

Chapter 21. MAP 0290: Missing Resource Problem Resolution

Purpose of This MAP

Use this MAP to handle problems when a resource is not detected by the diagnostics.

Step 0290-1

Use the "Display Configuration and Resource List" on page 164 to display the resources that were sensed by the configuration program when the diagnostic programs were loaded. Go to "Step 0290-2".

Notes:

1. Supplemental diskettes may be required for specific adapters and devices if service aids are run from Standalone Diagnostics.
2. ISA adapters cannot be detected by the system. The ISA Adapter Configuration Service Aid in Standalone Diagnostics allows the identification and configuration of ISA adapters, based on user input.
3. A resource's software must be installed on the AIX operating system before a resource can be detected by the Online Diagnostics.
4. If a parent device and all of its children are the missing resources at the same time, first use the parent device as the missing resource when going through this MAP. If the problem with the parent device is resolved so that it is no longer missing, but any of its children are still missing, use the children when going through this MAP.

Step 0290-2

Is the undetected resource a SCSI device installed in an externally attached enclosure for a SCSI device(s)?

NO Go to "Step 0290-4".

YES Go to "Step 0290-3".

Step 0290-3

Go to the documentation for SCSI devices installed in an externally attached enclosure for a SCSI device(s), and check the device(s) for proper power, cabling, fans running, and any other checks available. Return to this step after you check the device.

Did you find a problem?

NO Go to "Step 0290-4".

YES Correct the problem; then go to Chapter 23, "MAP 0410: Repair Checkout", on page 109.

Step 0290-4

Are you running Standalone Diagnostics?

NO Go to "Step 0290-7" on page 102.

YES Go to "Step 0290-5" on page 102.

Step 0290-5

Are multiple devices missing that are connected to the same adapter? (If the adapter itself is also missing, answer ″No″ to this question.)

NO Go to “Step 0290-7”.

YES Suspect a problem with the device adapter. Run diagnostics in problem determination mode on the device adapter, then go to “Step 0290-6”.

Step 0290-6

Did the diagnostics detect a problem with the adapter?

NO Go to “Step 0290-8”.

YES Record the SRN, then find the SRN in the SRN List and do the listed action.

Step 0290-7

Take the following steps:

1. Exchange the undetected resource.
2. Use the “Display Configuration and Resource List” on page 164 to display the resources sensed by the configuration program.

Is the resource listed?

NO Go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

YES Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0290-8

Are the missing devices attached to a backplane?

NO Go to “Step 0290-7”.

YES Exchange the backplane then go to “Step 0290-9”.

Note: Before exchanging the backplane check that all cables connected to the backplane are properly seated and that all cables and connectors are in good working condition. If a problem is found, correct it, and then go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0290-9

Load the standalone diagnostics; then use the list of resources in the DIAGNOSTIC SELECTION to determine if devices that were previously missing now appear on the resource list.

Are the previously missing devices now listed on the resource list?

NO Go to “Step 0290-10”.

YES Go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0290-10

Is the missing resource (or resources) on a SCSI bus?

NO Go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

YES Go to “Step 0290-11” on page 103.

Step 0290-11

Use the removal and replacement procedures for the backplane you are servicing for the following steps:

1. Remove all resources from the backplane.

   Repeat steps 2 through 4 for each device you removed from the backplane.
2. Reconnect the devices one at a time to the backplane.
3. After reconnecting each device, use the “Display Configuration and Resource List” on page 164 to display the resources sensed by the configuration program.
4. If one or more previously missing resources not appear, put the resources you removed in step 1 into the backplane, then go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.
5. If after having reconnected each device to the backplane, the previously missing resource does not appear, go to Chapter 6, “MAP 0030: Additional Problem Determination”, on page 39.

Chapter 22. MAP 0291: Missing Device or Bus Problem Resolution

Purpose of This MAP

Use this MAP when a bus or device (such as a disk drive) is reported as a missing resource by the diagnostics.

Step 0291-1

The device may be missing because of a power problem.

If the missing device is located in a drawer or enclosure, do the following:

1. Check for any environmental problem indicators such as power or cooling that may indicate a problem. (if needed, refer to the service documentation.)
2. If a problem is indicated, follow the service documentation to resolve the problem.

Go to “Step 0291-2”.

Step 0291-2

Inspect the cables (signal and power) of the missing device. Be sure all connections are in place and power is present. Refer to the system or enclosure documentation containing the power wiring diagram or system cable diagram to locate specific cables, determine the cable numbering, and check for a problem-determination procedure. Look for obvious power cabling problems, such as missing or loose cable connectors.

Power problems can sometimes be identified by checking other devices that use the same power source (such as a diskette drive and a SCSI tape drive, even though they have different controllers). If other devices that share a power source are reported as missing devices, suspect the power source as the problem.

If there is a power problem, refer to the system or enclosure documentation to resolve the problem.

Did you find a problem?

NO Go to “Step 0291-3” on page 106.

YES Correct the problem, then go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109.

Step 0291-3

Is the missing device a SCSI device installed in a SCSI Enclosure Services (AIX resource SES*x*) **or SAF-TE** (AIX resource SAFTE*x*), **or a SCSI device installed in either type of enclosure?**

NO Go to “Step 0210-1” on page 55.

YES Go to “Step 0291-4”.

Step 0291-4

Run the Advanced Diagnostics in Problem Determination mode on the SCSI Enclosure Services or SAF-TE device.

Note: A no trouble found result or if you get another SRN with the same digits before the dash as you previously had from the diagnostics indicates that you did NOT get a different SRN.

Did you get a different SRN than when you ran the diagnostics previously?

NO Go to “Step 0291-5”.

YES Take the following action:

1. Find the SRN in Chapter 30, “Using the SRN List”, on page 213.

   Note: If the SRN is not listed a Service Request Number Lists, look for additional information in the following:

   - Any supplemental service manual for the device.
   - The diagnostic Problem Report screen.
   - The Service Hints service aid in Chapter 27, “Using Standalone and Online Diagnostics”, on page 133.
2. Perform the action listed.

Step 0291-5

Power off the system (refer to the system service guide if necessary). Follow the removal and replacement procedures for the enclosure or system containing the hot-swap devices. Disconnect all hot-swap devices attached to the adapter. Reconnect the hot-swap devices one at a time. After reconnecting each device, do the following:

Power off the system. Disconnect all hot-swap devices attached to the adapter. Reconnect the hot-swap devices one at time. After reconnecting each device, do the following:

1. Power on the system and boot the system in the same mode that you were in when you received the symptom that led you to this MAP (refer to the system service guide if necessary).
2. At AIX command prompt, run missing options (**diag -a**).
3. Verify whether the device you just added to the system is missing from the system configuration, or if additional devices have been made missing, the problem may be with the last device reconnected. Perform these substeps:
   a. If the device you just added to the system shows as missing, or if additional devices were made missing, replace the last device.
   b. Rerun missing options (**diag -a**).
   c. If devices are no longer missing, go to Chapter 23, “MAP 0410: Repair Checkout”, on page 109. Otherwise, contact your support center.

      Note: A device problem can cause other devices attached to the same SCSI adapter to go into the Defined state. Ask the system administrator to make sure that all devices attached to the same SCSI adapter as the device that you replaced are in the Available state.

4. If no devices were missing, the problem could be intermittent. Make a record of the problem. Running the diagnostics for each device on the bus may provide additional information. If you have not replaced FFCs B88, 190, and 152 go to “Step 0210-1” on page 55, using FFCs (in order): B88, 190, and 152.

Chapter 23. MAP 0410: Repair Checkout

Purpose of This MAP

This MAP is used to check out the system after a repair is completed.

Note: Only use Standalone Diagnostics for repair checkout when no other diagnostics are available on the system. Standalone Diagnostics do not log repair actions.

If you are servicing a cluster, go to the End of Call MAP in the *Clustered Installation and Service Guide*.

Step 0410-1

Did you use an AIX or online AIX diagnostics service aid hot-swap operation to change the FRU?

NO Go to “Step 0410-2”.

YES Go to “Step 0410-7” on page 110.

Step 0410-2

Note: If the system planar or battery has been replaced and you are loading diagnostics from a server over a network, it may be necessary for the customer to set the network boot information for this system before diagnostics can be loaded. The system time and date information should also be set when the repair is completed.

Do you have cards, adapters, cables, devices, or any other FRUs that were removed during problem analysis that you want to put back into the system?

NO Go to “Step 0410-3”.

YES Go to “Step 0410-4”.

Step 0410-3

Is the system or logical partition under which you did the repair activity running an operating system other than AIX?

NO Go to “Step 0410-5” on page 110.

YES Go to “Step 0410-11” on page 111.

Step 0410-4

1. After performing a system shutdown, turn off the system power and unplug all power cords (cables) from electrical outlets.
2. Install all of the cards, adapters, cables, devices, and any other FRUs that were removed during problem analysis.

Is the system or logical partition under which you did the repair activity running an Operating System other than AIX?

NO Go to “Step 0410-5” on page 110.

YES Go to “Step 0410-11” on page 111.

Step 0410-5

Note: Unless the system or partition is incapable of running concurrent diagnostics, answer the question in this MAP step as **Yes**.

Do you want to run the concurrent diagnostics?

NO Go to “Step 0410-10” on page 111.

YES Go to “Step 0410-6”.

Step 0410-6

1. If the system supports Slow boot (See “About Slow Boot” on page 1) do a slow boot on the system. If the system does not support slow boot, do a normal boot.
2. Power on the system.
3. Wait until the AIX operating system login prompt displays or until apparent system activity on the operator panel or display has stopped.

Did the AIX Login Prompt display?

NO Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 0410-9”.

Step 0410-7

Is the system or partition containing the FRU running service mode diagnostics?

NO Go to “Step 0410-9”.

YES Go to “Step 0410-8”.

Step 0410-8

Exit service mode diagnostics, and reboot the system or partition that contains the FRU. Wait for the operating system login prompt or until the activity on the operator panel or display stops.

Did the AIX login prompt display?

NO Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 0410-9”.

Step 0410-9

If the **Resource Repair Action** menu is already displayed, go to “Step 0410-18” on page 113. Otherwise, do the following:

1. Log into the operating system either with root authority (if needed, ask the customer to enter the password) or use the CE login.
2. Enter the `diag -a` command and check for missing resources. Follow any instructions that display. If an SRN displays, suspect a loose card or connection. If no instructions display, no resources were detected as missing.
3. Enter the `diag` command.
4. Press Enter.
5. Select the **Advanced Diagnostics** option.
6. When the DIAGNOSTIC MODE SELECTION menu displays, select **System Verification**.

7. When the ADVANCED DIAGNOSTIC SELECTION menu displays, select the **All Resources** option or test the FRUs you exchanged, and any devices that are attached to the FRU(s) you exchanged, by selecting the diagnostics for the individual FRU(s).

Did the RESOURCE REPAIR ACTION menu (801015) display?

NO Go to “Step 0410-17” on page 113.

YES Go to “Step 0410-18” on page 113.

Step 0410-10

Note: If you are uncertain, answer Yes to the following question.

Are the Online Diagnostics Installed on the system?

NO If the operating system is running, stop it by doing the Shutdown Procedure. If you need help, contact the system administrator to shutdown the operating system. Go to “Step 0410-11”.

YES Go to “Step 0410-14” on page 112.

Step 0410-11

If the operating system is running, stop it by doing the Shutdown procedure for that operating system. If you need help, contact the system administrator to shutdown the operating system.

1. 1. Load the standalone diagnostics on the system or partition in which you did the repair action. If you cannot run standalone diagnostics on a partition, contact the system administrator to permit you to reboot the system running standalone diagnostics on the full machine partition (after running standalone diagnostics on full machine partition, you may reboot it as a multiple-partitioned system)
2. Wait until the diagnostics are loaded or the system appears to stop.
3. Press Enter.
4. Select the **Advanced Diagnostics** option.

   Note: If the terminal type is not defined. You are prompted to define it. You cannot continue until this is done.
5. When the DIAGNOSTIC MODE SELECTION menu displays, select **System Verification**. On the DIAGNOSTIC SELECTION menu, test the FRUs you exchanged by selecting the diagnostics for the individual FRUs. If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.

Did the TESTING COMPLETE, no trouble was found menu (801010) display?

NO There is still a problem. Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 0410-12”.

Step 0410-12

Does the system have a fault indicator or attention indicator?

NO Go to “Step 0410-20” on page 114.

YES Go to “Step 0410-13”.

Step 0410-13

1. From the Diagnostics From the **Diagnostic Operating Instructions** screen, press Enter.
2. From the **Function Selection Menu**, select **Task Selection**.

Is there a `Fault Indicators` or `System Fault Indicator` task?

NO Use the **Identify and Attention** Indicator task to reset the indicator. Go to “Step 0410-20” on page 114.

YES Use the **Fault Indicators** or **System Fault Indicators** task to reset the indicators. Go to “Step 0410-20” on page 114.

Step 0410-14

Note: If you are already in Service Mode, go to “Step 0410-15”.

1. Power on the system (if it is not already powered on).
2. Load the Online Diagnostics in Service Mode (refer to the system unit’s service guide if needed).
3. Wait until the Diagnostic Operating Instructions display or the system appears to stop.

Are the Diagnostic Operating Instructions Displayed?

NO Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 0410-15”.

Step 0410-15

1. Press Enter.
2. Select the **Task Selection** option.

   Note: If the terminal type is not defined. You are prompted to define it. You cannot continue until this is done.
3. Select the **Log Repair Action** 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. Press **commit** after you have made your selection.
6. Press the key for the previous menu two times to get to the Function Selection menu.
7. Select the **Advanced Diagnostics Routines** option.
8. If the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.

Is the ADVANCED DIAGNOSTIC SELECTION menu displayed?

NO Go to Step 1 of Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 0410-16”.

Step 0410-16

Test the FRUs you exchanged, and any devices that are attached to the FRU(s), by selecting the individual FRUs.

Note: If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.

Did the RESOURCE REPAIR ACTION menu (801015) display?

NO Go to “Step 0410-17” on page 113.

YES Go to “Step 0410-18” on page 113.

Step 0410-17

Did the TESTING COMPLETE, no trouble was found menu (801010) display?

NO There is still a problem. Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Use the **Log Repair Action** option, if not previously logged, in the TASK SELECTION menu to update the AIX Error Log. If the repair action was reseating a cable or adapter, select the resource associated with that repair action.

If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.

Note: On systems with a Fault Indicator LED, this changes the Fault Indicator LED from the *Fault* state to the *Normal* state.

Go to “Step 0410-20” on page 114.

Step 0410-18

When a test is run on a resource in System Verification mode, and that resource has an entry in the AIX error log, if the test on the resource was successful, the RESOURCE REPAIR ACTION menu displays.

After replacing a FRU, you must select the resource for that FRU from the RESOURCE REPAIR ACTION menu. This updates the AIX error log to indicate that a system-detectable FRU has been replaced.

Note: On systems with a Fault Indicator LED, this changes the Fault Indicator LED from the *Fault* state to the *Normal* state.

Do the following:

1. Select the resource that has been replaced from the RESOURCE REPAIR ACTION menu. If the repair action was reseating a cable or adapter, select the resource associated with that repair action.

   If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.
2. Press **Commit** after you make your selections.

Did another Resource Repair Action (801015) display?

NO If the No Trouble Found menu displays, go to “Step 0410-20” on page 114.

YES Go to “Step 0410-19” on page 114.

Step 0410-19

The parent or child of the resource you just replaced may also require that you run the RESOURCE REPAIR ACTION service aid on it.

When a test is run on a resource in System Verification mode, and that resource has an entry in the AIX error log, if the test on the resource was successful, the RESOURCE REPAIR ACTION menu displays.

After replacing that FRU, you must select the resource for that FRU from the RESOURCE REPAIR ACTION menu. This updates the AIX error log to indicate that a system-detectable FRU has been replaced.

Note: On systems with a Fault Indicator LED, this changes the Fault Indicator LED from the FAULT state to the NORMAL state.

Do the following:

1. From the RESOURCE REPAIR ACTION menu, select the parent or child of the resource that has been replaced . If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your action is not displayed on the Resource List, select **sysplanar0**.
2. Press COMMIT after you make your selections.
3. If the No Trouble Found menu displays, go to “Step 0410-20”.

Step 0410-20

If you changed the Service Processor or Network settings, as instructed in previous MAPs, restore the settings to the value they had prior to servicing the system.

Did you perform service on a RAID subsystem involving changing of the RAID adapter cache card or changing the configuration?

NO Go to “Step 0410-24” on page 115.

YES Go to “Step 0410-21”.

Step 0410-21

Is the system or logical partition containing the RAID adapter you performed service on running an operating system other than AIX ?

NO Exit the diagnostic programs. Ask the system administrator to run the PCI SCSI Disk Array Manager by typing **smitty pdam** at the AIX prompt. Also, ask the system administrator to do the procedure in “Step 0410-23” on page 115.

YES Go to “Step 0410-22” on page 115.

Step 0410-22

1. Run the shutdown procedure for the operating system (contact the system administrator for help if needed).
2. Boot the logical partition or system in AIX standalone diagnostics, version 5.2.0.0 or higher.
3. When the Diagnostic Operating Instructions screen displays, press Enter.
4. At the Function Selection screen, select **Task Selection**.
5. Select **PCI SCSI Disk Array Manager**.
6. Ask the system administrator to do the procedure in “Step 0410-23”

Step 0410-23

Use the **Recover Options** selection to resolve the RAID configuration. To do this, do the following:

1. On the PCI SCSI Disk Array Manager screen, select **Recovery options**.
2. If a previous configuration exists on the replacement adapter, this must be cleared. Select **Clear PCI SCSI Adapter Configuration**. Press F3.
3. On the Recovery Options screen, select **Resolve PCI SCSI RAID Adapter Configuration**.
4. On the Resolve PCI SCSI RAID Adapter Configuration screen, select **Accept Configuration on Drives**.
5. On the PCI SCSI RAID Adapter selections menu, select the adapter that you changed.
6. On the next screen, press Enter.
7. When you get the Are You Sure selection menu, press Enter to continue.
8. You should get an `OK` status message when the recover is complete. If you get a `Failed` status message, verify that you selected the correct adapter, then repeat this procedure. When recover is complete, exit the operating system.
9. Go to “Step 0410-24”.

Step 0410-24

Does the system or partition have an operating system installed?

NO Go to “Step 0410-26”

YES Go to “Step 0410-25”

Step 0410-25

Boot the operating system, with the system or partition in normal mode.

Were you able to boot the operating system?

NO Go to the Chapter 2, “Start of Call MAP”, on page 13.

Yes Go to “Step 0410-26”

Step 0410-26

If the system you are servicing has a Hardware Maintenance Console (HMC) with Service Focal Point (SFP), go to the End of Call MAP for Systems with Service Focal Point.

This completes the repair, return the system to the customer.

Chapter 24. MAP 0420: System Checkout

Purpose of This MAP

Use this MAP to verify that the system is working correctly.

Step 0420-1

1. If the operating system is running, perform the operating system's shutdown procedure (get help if needed).
2. Power off the system.
3. Power on the system.
4. Load either the Online or Standalone Diagnostics in Service Mode (refer to the system unit's service guide if necessary).
5. Wait until the diagnostics are loaded or the system appears to stop.

Were you able to load the diagnostics?

NO There is a problem. Go to the system unit's service guide.

YES Go to "Step 0420-2".

Step 0420-2

1. Press Enter.
2. When the FUNCTION SELECTION menu displays, select **Advanced Diagnostics**.
3. When the DIAGNOSTIC MODE SELECTION menu displays, select the **System Verification** option.

   Note: If the terminal type is not defined, you are prompted to define it. You cannot continue until this is done.
4. On the DIAGNOSTIC SELECTION or ADVANCED DIAGNOSTIC SELECTION menu, look through the list of resources to make sure that all adapters and SCSI devices are listed including any new resources.

   Notes:

   a. Resources attached to serial and parallel ports may not appear in the resource list.

   b. ISA adapters cannot be detected by the system. The ISA Adapter Configuration Service Aid in Standalone Diagnostics allows the identification and configuration of ISA adapters.

   c. If running diagnostics in a partition within a partitioned system, resources assigned to other partitions are displayed on the resource list.

   Did you find all the adapters or devices on the list?

   No Go to "Step 0420-3" on page 118.

   Yes Go to "Step 0420-5" on page 118.

Step 0420-3

Is the new device or adapter an exact replacement for a previous one installed at same location?

No Go to “Step 0420-4”.

Yes The replacement device or adapter may be defective. If possible, try installing it in an alternate location if one is available. If it works in that location, suspect that the location where it failed to appear has a defective slot; schedule time to replace the hardware that supports that slot. If it does not work in an alternate location, suspect a bad replacement adapter or device. If you are still unable to detect the device or adapter, contact your service support structure.

Step 0420-4

Is the operating system software to support this new adapter or device installed?

No Load the operating system software.

Yes The replacement device or adapter may be defective. If possible, try installing it in an alternate location if one is available. If it works in that location, suspect that the location where it failed to appear has a defective slot; schedule time to replace the hardware that supports that slot. If it does not work in an alternate location, suspect a bad replacement adapter or device. If you are still unable to detect the device or adapter, contact your service support structure.

Step 0420-5

1. The MISSING RESOURCE menu only displays when a resource was removed or moved. If the MISSING RESOURCE menu is displayed, follow the instructions.
2. If the ADVANCED DIAGNOSTIC SELECTION menu displays, select the **System Verification** option, then use the **All Resources** option to test the system or select the individual tests you want to run. If the RESOURCE SELECTION menu is displayed, select the **All Resources** option to test the system or select each test you want to run.

Did the test pass?

NO There is a problem. Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES This completes the system checkout.

Chapter 25. Installation Checkout

The installation checkout is used by the service representative to verify system quality after initial installation or after an MES or EC has been installed.

Installation Checkout Procedure

To start the checkout, go to “Step 1. Doing a Visual Check”.

Step 1. Doing a Visual Check

Perform the following actions after initial system installation or system alteration:

1. Be sure the system unit power switch is set to Off.
2. Be sure the power switches on all of the attached devices are set to Off.
3. Visually check the system unit and attached devices to ensure that:
   - All power cables are securely attached to the system unit or devices
   - All signal cables are connected at both ends
   - All power cables are plugged into the customer’s outlet
   - All covers are installed and the vent openings are not obstructed
   - All ribbons, guides, and other attachments are in place.
4. Go to “Step 2. Checking the TTY Terminal Attributes”.

Step 2. Checking the TTY Terminal Attributes

Checking the TTY Terminal Attributes usually needs to be accomplished only during the initial installation.

If you have trouble selecting the console display and you are using an attached terminal, check the TTY Terminal Attributes again.

When you run the diagnostic programs from an attached TTY terminal, the attributes for the terminal must be set to match the defaults of the diagnostic programs. The TTY terminal must be attached to the S1 serial port on the system unit.

Are you going to run this procedure on an attached TTY terminal?

NO Go to “Step 3. Loading the Diagnostics” on page 120.

YES Go to “Running the Diagnostics from a TTY Terminal” on page 138, and check the terminal attributes. Return to Step 3 when you finish checking the attributes.

Step 3. Loading the Diagnostics

The diagnostics can be run from a CD-ROM disc, from a locally attached disk, or from a server if the AIX operating system is installed on the system. If you are not sure whether the AIX operating system is installed, you can check by turning the system unit on. If the System Management Service menu displays, the AIX operating system is not installed.

If the AIX operating system is installed, the diagnostic programs load from a locally attached disk or from a server. If the AIX operating system is not installed, diagnostics can be loaded from the diagnostic CD-ROM disc.

The following procedure attempts to load the diagnostics from a disk or from a server. If they cannot be loaded from a disk or server, the diagnostic CD-ROM disc is used to load and run the checkout.

1. Set the power switches on all of the attached devices to On.
2. Set the power switch on the system unit to On.

   Note: After the first icon displays on the system console, press F6 if you are using a directly attached console, or press 6 on a TTY console.
3. If the System Management Services menu displays, the AIX operating system is not installed. Do the following:
   a. Insert the diagnostic CD-ROM disc into the CD-ROM drive.
   b. Power off the system unit, wait 45 seconds and then power on the system unit.

      Note: After the first icon displays on the system console, press F6 if you are using a directly attached console, or press 6 on a TTY console.
   c. If the system stops with an eight-digit error code displayed or stops with an icon or icons displayed, a problem was detected.

      Check for loose cables or cards. If you do not find a problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.
4. When the diagnostic programs load correctly, the DIAGNOSTIC OPERATING INSTRUCTIONS display.

Did the DIAGNOSTIC OPERATING INSTRUCTIONS display?

NO Go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 4. Checking for the Correct Resources” on page 121.

Step 4. Checking for the Correct Resources

Use the Display or Change System Configuration or VPD service aid to check the resources that are present (memory, SCSI devices, adapters, diskette drives, disk drives, and input devices).

Notes:

1. If the terminal type has not been defined, it must be defined before you can select the service aids. Use the **Initialize Terminal** option on the FUNCTION SELECTION menu to define the terminal.
2. If the Dials and LPFK are attached to serial ports S1 or S2, they are not listed by the service aid unless they have been configured by the user. Refer to the AIX operating system documentation to configure these devices.

Were all the resources listed by the service aid?

NO Check for loose cables or cards. If you do not find a problem, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25.

YES Go to “Step 5. Checking the Hardware”.

Step 5. Checking the Hardware

If you are running Online diagnostics from a disk, the system can be checked by one of the following methods; depending on the version of the diagnostic programs you are using:

1. Select **Advanced Diagnostics** on the FUNCTION SELECTION menu.
2. Select **System Verification** on the DIAGNOSTIC MODE SELECTION menu.

   All resources can be checked out by selecting **System Verification** option on the ADVANCED DIAGNOSTIC SELECTION menu, then select the **All Resources** option, or you can select each resource individually.
3. Check each resource.

Did all of resources check out good?

NO Record the SRN; then go to Chapter 3, “Fast Path MAP”, on page 15.

YES Go to “Step 6. Completing the Installation” on page 122.

Step 6. Completing the Installation

Some of the following steps only apply to an initial installation. These steps are provided as reminders in completing the installation or finishing an MES or EC activity.

1. If present, remove the CD-ROM diagnostic disc from the appropriate drive, and store it in the binder with the operator guides.
2. Give the keys to the customer and explain the importance of keeping the reorder tag for the keys in a safe place.
3. Keep a copy of the following:
   - SCSI Address Record from System Records appendix in the User's Guide.
   - Machine History card for each system unit and device.

Microcode must be installed during system installation or after the AIX operating system is installed. If the system is using the AIX operating system, all microcode is preinstalled on the boot disk for all adapters and devices that were shipped with the system.

Microcode is shipped on microcode diskettes, option diskettes and on the boot disk. For the AIX operating system, runtime microcode maintenance can be selected from the SMIT INSTALLATION AND MAINTENANCE MENU or from the Diagnostic Service Aid. The **adfutil -m** (command and flag) is normally used to install microcode shipped on option diskettes.

If the system is using another type of operating system, that operating system should include microcode installation instructions.

If you have the X.25 Interface Coprocessor, the microcode for them is normally not shipped with the AIX operating system. The microcode for these adapters must be installed before the adapters can be used. The X.25 Interface Coprocessor microcode is shipped on an option diskette.

Contact the person that is going to install the software or turn the system over to the customer.

If needed, go to the AIX operating system Installation Kit to install and configure the AIX operating system.

Chapter 26. General Diagnostic Information

Information in this section is common to all system units. Any service information or diagnostic procedure that is specific to a certain system unit or device is in the operator guide or service guide for that system unit or device.

AIX Operating System Message Files

English is the default language displayed by the diagnostic programs when run from disk. If you want to run the diagnostic programs in a language other than English you must install on the system the AIX operating system message locale fileset for the desired language you want displayed.

Firmware and Microcode

There are several types of firmware used by the system:
- Power subsystem firmware (if applicable)
- Service power control network (SPCN) firmware (if applicable)
- Service processor firmware (if applicable)
- System firmware

The following types of microcode are used by the system:
- Adapter microcode
- Device microcode

AIX diagnostic tasks provide the capability to display device and adapter microcode levels as well as update device and adapter microcode. AIX diagnostic tasks also provide the capability to update firmware.

To determine the level of device and adapter microcode, use the **Display Microcode Level** Task. This task presents a list of resources that are currently installed and supported by this task. The AIX **lsmcode** command can also be used to display microcode levels. On CHRP systems, this task displays the system firmware levels. For additional information, refer to “Display Microcode Level” on page 165. For adapters and devices not supported by this task, refer to the manufacturer’s instructions to determine the microcode levels.

Use the **Update System or Service Processor Flash** task to update a system’s firmware (or service processor firmware if applicable) on CHRP systems. Use the **Update System Flash** task to update the system’s firmware for RSPC systems. When the flash update is complete, the system automatically reboots. Microcode images can be installed from disk, diskette, or NIM server. For additional information, refer to ″“Update System or Service Processor Flash” on page 188 or the “Update System Flash” on page 189.

Use the **Microcode Download** task to install microcode onto devices and adapters. This task presents a list of resources that are currently installed and supported by this task. Microcode images can be installed from disk, diskette, or NIM server. For additional information, refer to the “Download Microcode” on page 170. For adapters and devices with microcode that can be updated but are not supported by this task, refer to the manufacturer’s instructions.

For systems not using AIX, these tasks can be used via the standalone CD or NIM server. Otherwise refer to the corresponding documentation for the operating system on installing microcode.

CEREADME File

A CEREADME (CE readme) file is available on all diagnostic media. This file may contain information such as:

- Errata information for the service guides
- Service hints for problems
- Diagnostic information that may not be included in service guides
- Other pertinent (usually release-specific) information

The CEREADME file is helpful in describing differences in diagnostics between the current version and the preceding version.

You can view the CEREADME file by using the Service Hints service aid after the diagnostics are loaded. Also, you can read the file directly from the disk using the AIX **pg** command to display **/usr/lpp/diagnostics/CEREADME**. The CEREADME file can be copied or printed using the normal commands. For information about using the service hints, refer to “Display Service Hints” on page 168.

Printing the CEREADME File from Disk

You can print the CEREADME file from disk using the **cat** command. The path to this file is as follows: **/usr/lpp/diagnostics/CEREADME**

A copy of this file should be printed and stored with the Service Information. **lp0** is normally the printer attached to the parallel port. If a printer is attached to the parallel port and is considered as **lp0**, the command for printing the file is as follows:

```
cat /usr/lpp/diagnostics/CEREADME > /dev/lp0
```

Printing the CEREADME File from a Source other than Disk

The CEREADME file cannot be printed while diagnostics are being executed from a source other than from the disk. The file can be printed on a system when the AIX operating system is running in a normal user environment. The procedure involves copying the file from the diagnostic media to a temporary file on disk, printing the file, and then deleting the file from disk. Check for directory **/tmp/diag**. To determine if this directory already exists, enter:

```
cd /tmp/diag
```

If the directory does not exist, the message `/tmp/diag: not found` displays. *Do not* attempt to print the CEREADME file if this message is not displayed. To print the CEREADME file, choose the appropriate section below and follow the steps listed.

Printing the CEREADME File from CD-ROM

Insert the diagnostic CD-ROM disc into the CD-ROM drive, and then enter the following commands:

```
mkdir /tmp/diag
mount -o ro -v cdrfs /dev/cd0  /tmp/diag
cd /tmp/diag/usr/lpp/diagnostics
cat CEREADME > /dev/lp0
cd /tmp
unmount /dev/cd0
```

The CEREADME file prints on **lp0**, which is the printer normally attached to the parallel port. If this file is not the same as the CEREADME file on the disk, a copy of this file should be printed and stored with the Service Information.

CE Login

CE login enables a user to perform operating system commands that are required to service the system without being logged in as a root user. CE login must have a role of **RunDiagnostics** and a primary group of **system**. This enables the user to:

- Run the diagnostics including the service aids, such as hot plug tasks, certify, format, and so forth.
- Run all the operating system commands run by **system** group users.
- Configure and unconfigure devices that are not busy.

In addition, CE login can have **shutdown** group enabled to allow:

- Use of the Update System Microcode service aid.
- Use of shutdown and reboot operations.

To use CE login, ask the customer to create a unique user name and configure these characteristics for that name. (Refer to the Users and Groups section of the *AIX 5L Version 5.1 System Management Guide: Operating System and Devices*.) After this is set up, you will need to obtain the user name and password from the customer to log in with these capabilities. The recommended CE login user name is **qserv**.

Automatic Diagnostic Tests

All automatic diagnostic tests run after the system unit is turned on and before the AIX operating system is loaded.

The automatic diagnostic tests display progress indicators (or checkpoints) to track test progress. If a test stops or hangs, the checkpoint for that test remains in the display to identify the unsuccessful test. The descriptions of these tests are contained in the system's service guide.

Built-In Self-Test

On RSPC systems, the Built-In Self-Test (BIST) programs run first after the system unit is turned on. These programs test the central electronics complex.

Power-On Self-Test

On PREP and CHRP systems, the Power-On Self-Test (POST) programs check the devices needed to accomplish an initial program load. The POST also checks the memory, and portions of the central electronics complex, common interrupt handler, and the direct memory access (DMA) handler.

Configuration Program

The configuration program determines what features, adapters, and devices are present on the system. The configuration program, which is part of the AIX operating system, builds a configuration list that is used by the diagnostic programs to control which tests are run during system checkout.

On systems running AIX, the configuration program displays numbers between 2E6 through 9FF and 2300 through 27FF in the operator panel display (if present). Refer to Chapter 29, “Diagnostics Numbers and Location Codes”, on page 191 for a listing of program actions associated with displayed numbers. On systems running logical partitions, LPAR displays in the operator panel (if present) after the hypervisor (the system firmware that controls the allocation of resources) is loaded. When a partition running AIX is subsequently booted, the configuration codes display on the virtual operator panel on the HMC.

Devices attached to serial and parallel ports are not configured. The Dials and Lighted Program Function Keys (LPFKs) can be tested from Online Diagnostics after they are manually configured. No other device attached to the serial and parallel ports is supported by the diagnostics.

CPU and Memory Testing and Error Log Analysis

Except for the floating-point tests, all CPU and memory testing on the system units are done by POST and BIST. Memory is tested entirely by the POST. The POST provides an error-free memory MAP. If POST cannot find enough good memory to boot, it halts and displays an error message. If POST finds enough good memory, the memory problems are logged and the system continues to boot.

If any memory errors were logged, they are reported by the base system or memory diagnostics, which must be run to analyze the POST results.

The CPU and memory cannot be tested after the AIX diagnostics are loaded; however, they are monitored for correct operation by various checkers such as processor runtime diagnostics. Exercisers can be run on memory and the floating point unit of the processor to help troubleshoot intermittent problems with those functions (see “Run Exercisers” on page 182). If the threshold value of correctable errors is reached, an error is logged into the error log.

Single-bit memory errors are corrected by ECC (Error Checking and Correction) on systems equipped with ECC memory.

Diagnostic Programs

This section provides overview of the various diagnostic programs.

Diagnostic Controller

The diagnostic controller runs as an application program on the AIX operating system. The diagnostic controller carries out the following functions:

- Displays diagnostic menus
- Checks availability of needed resources
- Checks error log entries under certain conditions
- Loads diagnostic application programs
- Loads task and service aid programs
- Displays test results

To test an adapter or device, select the device or adapter from the Diagnostic Selection menu. The diagnostic controller then loads the diagnostic application program for the selected device or adapter.

The diagnostic application program loads and runs test units to check the functions of the device or adapter.

The diagnostic controller checks the results of the tests done by the diagnostic application and determines the action needed to continue the testing.

The amount of testing that the diagnostic application does depends on the mode (service, maintenance, or concurrent) under which the diagnostic programs are running.

Error Log Analysis

When you select **Diagnostics** or **Advanced Diagnostics**, the Diagnostic Selection menu displays (other menus may display before this menu). This menu allows you to select the purpose for running diagnostics.

When you select the **Problem Determination** option, the diagnostic programs read and analyze the contents of the error log.

Note: Most hardware errors in the operating system error log contain *sysplanar0* as the resource name. The resource name identifies the resource that detected the error, it does not indicate that the resource is faulty or should be replaced. Use the resource name to determine the appropriate diagnostic to analyze the error.

If the error log contains recent errors (approximately the last 7 days), the diagnostic programs automatically select the diagnostic application program to test the logged function.

If there are no recent errors logged or the diagnostic application program runs without detecting an error, the Diagnostic Selection menu is displayed. This menu allows you to select a resource for testing.

If an error is detected while the diagnostic application program is running, the A PROBLEM WAS DETECTED screen displays a Service Request Number (SRN).

Note: After a FRU is replaced based on an error log analysis program, the error log entries for the problem device must be removed or the program may continue to indicate a problem with the device. To accomplish this task, run the **errclear** command from the command line, or use System Management Interface Tool (SMIT) to select **Problem Determination / Error Log / Clear the Error Log**. Fill out the appropriate menu items.

Enhanced FRU Isolation

The diagnostics provide enhanced Field Replaceable Unit (FRU) isolation by automatically selecting associated resources. The typical way in which diagnostics select a resource is to present a list of system resources, and you are then asked to select one. Diagnostics begin with that same type of selection.

If the diagnostic application for the selected resource detects a problem with that resource, the diagnostic controller checks for an associated resource. For example, if the test of a disk drive detects a problem, the diagnostic controller tests a sibling device on the same controller to determine if the drive or the controller is failing. This extra FRU isolation is apparent when you test a resource and notice that the diagnostic controller continues to test another resource that you did not select.

Advanced Diagnostics Function

The advanced diagnostics function is normally used by a service representative. These diagnostics may ask you to disconnect a cable and install a wrap plug.

The advanced diagnostics run in the same modes as the diagnostics used for normal hardware problem determination. The advanced diagnostics provide additional testing by allowing the service representative to do the following:

- Use wrap plugs for testing.
- Loop on a test (not available in concurrent mode) and display the results of the testing.

Task and Service Aid Functions

If a device does not show in the Test List or you think a device's Diagnostic Package is not loaded, check by using the Display Configuration and Resource List task. If the device you want to test has a plus (+) sign or a minus (-) sign preceding its name, the Diagnostic Package is loaded. If the device has an asterisk (*) preceding its name, the Diagnostic Package for the device is not loaded or is not available.

Tasks and service aids provide a means to display data, check media, and check functions without being directed by the hardware problem determination procedure. Refer to Chapter 28, "Introducing Tasks and Service Aids", on page 151 for information and procedures about tasks and service aids.

System Checkout

The system checkout program uses the configuration list generated by the configuration procedure to determine which devices and features to test. These tests run without interaction. To use system checkout, select **All Resources** on the Resource Selection menu.

Missing Options DIMBS Description

In diagnostics version earlier than 5.2.0, missing devices are presented on a Missing Resource screen. This happens as a result or running **diag -a** or by booting online diagnostics in service mode.

In diagnostics version 5.2.0 and later, missing devices are identified on the Diagnostic Selection screen by an uppercase `M` preceding the name of the device that is missing. The Diagnostic Selection menu is displayed anytime you run the Diagnostic Routines or the Advanced Diagnostics Routines. The Diagnostic Selection menu can also be entered by running **diag -a** when there are missing devices or missing paths to a device.

When a missing device is selected for processing, the Missing Resource menu will ask whether the device has been turned off, removed from the system, moved to a different physical location, or if it is still present.

When a single device is missing, the fault is probably with that device. When multiple devices with a common parent are missing, the fault is most likely related to a problem with the parent device.

The diagnostic procedure may include testing the device's parent, analyzing which devices are missing, and any manual procedures that are required to isolate the problem.

Missing Path Resolution for MPIO Resources

Diagnostics also identifies a Multipath I/O device that has multiple configured paths, all of which are missing as a missing device. If some, but not all, paths to a multipath I/O device are missing, then diagnostics identifies those paths as missing. In such an instance, an uppercase `P` displays in front of the multipath I/O device.

When a device with missing paths is selected from the **Diagnostic Selection** menu, the **Missing Path Selection** menu displays showing the missing paths for the device. The menu requests the user to select a missing path for processing. If the device has only one missing path, then the selection menu is bypassed. In either case, a menu is displayed showing the selected missing path and other available paths to the device (which may be missing or available). The menu asks if the missing path has been removed, has not been removed, or should be ignored. The procedures are as follows:

- If the **Path Has Been Removed** option is selected, diagnostics removes the path from the data base.
- If the **Path Has Not Been Removed** option is selected, diagnostics determines why the path is missing.
- If the **Run Diagnostics on the Selected Device** option is selected, diagnostics runs on the device and does not change the system configuration.

Periodic Diagnostics

Periodic testing of the processors is enabled by default. Problems are reported by a message to the system console, and either a serviceable event sent to the Service Focal Point for a system with an HMC (hardware management console) or to an e-mail message sent to all users in the system group.

Periodic diagnostics are controlled by the periodic diagnostic service aid. The periodic diagnostic service aid allows a hardware resource to be tested once a day. If the resource cannot be tested because it is busy, error log analysis is performed if supported on the resource. In diagnostics version 5.1.0.15 and later, periodic diagnostics only supports testing of processors. Disk drives and system planars are no longer supported by periodic diagnostics because testing is not supported in concurrent diagnostics and coverage is provided by automatic error log analysis.

Processors that are dynamically removed from the system are also removed from the periodic test list. Processors that are dynamically added are automatically added to the periodic test list.

Periodic Diagnostic Reminders

Periodic diagnostic reminders are notifications about failed or deconfigured resources that are reported by firmware to the operating system. Periodic diagnostic reminder mode is run following a successful system boot and then every Tuesday at 8 a.m. Only the resources in the periodic test list are tested for failed or deconfigured status. Adding or removing a resource from the periodic test list enables or disables the periodic diagnostic reminder for that resource.

In diagnostics version 5.1.0.15 and later, periodic diagnostic reminder mode is only run for processors. Periodic diagnostic reminder mode for processors also performs testing on the processors. Problems are reported by a message to the system console, and either a serviceable event sent to the Service Focal Point for a system with an HMC or an e-mail message sent to all users in the system group.

Automatic Error Log Analysis (diagela)

Automatic Error Log Analysis (**diagela**) provides the capability to perform error log analysis when a permanent hardware error is logged, by enabling the **diagela** program on all platforms.

The **diagela** program determines if the error should be analyzed by the diagnostics. If the error should be analyzed, a diagnostic application is invoked and the error is analyzed. No testing is done if the diagnostics determine that the error requires a service action. Instead it sends a message to your console, and either the Service Focal Point for systems with a HMC, or to all system groups. The message contains the SRN.

Running diagnostics in this mode is similar to using the **diag -c -e -d** *Device* command.

Notification can also be customized by adding a stanza to the **PDiagAtt** object class. The following example illustrates how a customer's program can be invoked in place of the normal mail message, or in addition to sending the message to the Service Focal Point when there is a HMC:

```
PDiagAtt:
     DClass = " "
     DSClass = " "
     DType = " "
     attribute = "diag_notify"
     value = "/usr/bin/customer_notify_ program $1 $2 $3 $4 $5"
     rep = "s"
```

If DClass, DSClass, and DType are blank, then the `customer_notify_program` applies for *all* devices. Filling in the DClass, DSClass, and DType with specifics causes the `customer_notify_program` to be invoked only for that device type.

After the above stanza is added to the ODM data base, problems are displayed on the system console and the program specified in the value field of the `diag_notify` predefined attribute is invoked. The following keyword is expanded automatically as arguments to the notify program:

- $1 the keyword `diag_notify`
- $2 the resource name that reported the problem
- $3 the Service Request Number
- $4 the device type
- $5 the error label from the error log entry

In the case where no diagnostic program is found to analyze the error log entry, or analysis is done but no error was reported, a separate program can be specified to be invoked. This is accomplished by adding a stanza to the **PDiagAtt** object class with an attribute = **diag_analyze**. The following example illustrates how a customer's program can be invoked for this condition:

```
PDiagAtt:
     DClass = " "
     DSClass = " "
     DType= " "
     attribute = "diag_anaylze"
     value = "/usr/bin/customer_analyzer_program $1 $2 $3 $4 $5"
     rep = "s"
```

If DClass, DSClass, and DType are blank, then the `customer_analyzer_program` applies for all devices. Filling in the DClass, DSClass, and DType with specifics causes the `customer_analyzer_program` to be invoked only for that device type.

After the above stanza is added to the ODM data base, the program specified is invoked if there is no diagnostic program specified for the error, or if analysis was done, but no error found. The following keywords expand automatically as arguments to the analyzer program:

- $1 the keyword **diag_analyze**
- $2 the resource name that reported the problem
- $3 the error label from the error log entry if from ELA, the keyword PERIODIC if from Periodic Diagnostics, or the keyword REMINDER if from a Diagnostic Reminder.

- $4 the device type
- $5 the keywords:
  - **no_trouble_found** if the analyzer was run, but no trouble was found.
  - **no_analyzer** if the analyzer is not available.

To activate the Automatic Error log Analysis feature, log in as root user (or use CE login) and type the following command:

```
/usr/lpp/diagnostics/bin/diagela ENABLE
```

To disable the Automatic Error Log Analysis feature, log in as root user (or use CE login) and type the following command:

```
/usr/lpp/diagnostics/bin/diagela DISABLE
```

The **diagela** program can also be enabled and disabled using the Periodic Diagnostic Service Aid.

Log Repair Action

The diagnostics perform error log analysis on most resources. The default time for error log analysis is seven days; however, this time can be changed from 1 to 60 days using the **Display or Change Diagnostic Run Time Options** task. To prevent false problems from being reported when error log analysis is run, repair actions need to be logged whenever a FRU is replaced. A repair action can be logged by using the **Log Repair Action** task or by running advanced diagnostics in System Verification mode.

The Log Repair Action task lists all resources. Replaced resources can be selected from the list, and when **commit** (F7 key) is selected, a repair action is logged for each selected resource.

System Fault Indicator and System Identify Indicator

Some systems support the System Identify Indicator and/or the System Fault Indicator.

The System Identify Indicator is used to help physically identify a particular system in a room. The System Fault Indicator is used to help physically identify a particular system that has a fault condition.

On a system that supports System Fault Indicator, the indicator is set to Fault condition when a fault is detected. After the problem with the system is fixed, the system fault indicator should be set back to Normal. This is done by using the Log Repair Action task. For additional information, see “Log Repair Action”.

Note: This action keeps the System Fault Indicator from being set to the Fault state due to a previous error, that has already been serviced, in the error log.

Both of these indicator functions can be managed by using the System Identify Indicator and System Fault Indicator Tasks. See “System Fault Indicator” on page 187 or “System Identify Indicator” on page 187 for additional information.

Testing the Line Printer

The following is a simple procedure for determining if a printer attached to your system is responding correctly. The AIX operating system should be up and running in your normal environment.

To determine what printers are available, enter the following:

```
lsdev -C -c printer
```

This command displays a list of printers currently defined on the system. Only those printers that are in the available state can be used (for example, those printers marked as defined cannot be used). Ensure that a printer is actually connected at the location that was specified in the output of the command.

To begin printing, enter the following:

```
cat /usr/lpp/diagnostics/CEREADME > /dev/lpx
```

Note: In the above step, you must substitute for x the value obtained from the **lsdev** command.

In the above example, the contents of the CEREADME file will print.

Array Bit Steering

An advanced feature of many systems is Array Bit Steering. The processors in these systems have internal cache arrays with extra memory capacity that can be configured to correct certain types of array faults.

This reconfiguration can be used to correct arrays for faults detected at IPL or run time. In the case of a fault detected during run time, the recoverable fault is reported with a ″Repair Disposition Pending Reboot″ indicator set. This allows diagnostics to call out a Service Request Number that identifies the array and directs the Service Representative to a MAP for problem resolution that uses array bit steering. If the array bit steering cannot be used for the reported fault, then the FRU with that array is replaced.

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

For a Full Machine 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 (AIX command `chdev -l 'tty'x -a login='enable'` where x is the tty number corresponding to the S1 serial port).

Enhanced I/O Error Handling

Enhanced I/O Error Handling (EEH) is an error recovery strategy for errors that can occur during I/O operations on the PCI bus. Not all systems support EEH; if you get an SRN involving an EEH error, follow the action listed.

Chapter 27. Using Standalone and Online Diagnostics

The diagnostics consist of Standalone Diagnostics and Online Diagnostics. The Standalone Diagnostics must be booted before they are run. If booted, they have no access to the AIX Error Log or the AIX Configuration Data.

Online Diagnostics, when installed, are resident with AIX on the disk or server. They can be booted in single user mode (called *service mode*), run in maintenance mode (called *maintenance mode*), or run concurrently (called *concurrent mode*) with other applications. They have access to the AIX Error Log and the AIX Configuration Data.

Attention: If this system unit is attached to another system, be sure you isolate this system unit before stopping the operating system or running diagnostic programs. Some system-cabling changes (such as installing wrap plugs or removing a device from the configuration) may require action by the operator of the attached system before making the cabling changes on this system.

Attention: The AIX operating system must be installed in order to run Online Diagnostics. If the AIX operating system is not installed, use the standalone diagnostic procedures.

Standalone and Online Diagnostics Operating Considerations

Before you use the diagnostics, consider the following items:

- Standalone diagnostics at version 5.2.0.0 or later cannot be run on RSPC systems.
- Support for some devices has been withdrawn from AIX 5.2.0.0 and later. For a list of devices for which support has been withdrawn, refer to the AIX 5.2 release notes. To diagnose a device that no longer is supported in AIX 5.2.0, either move the device to a system running an AIX level earlier than 5.2.0 or use standalone diagnostics earlier than 5.2.0.
- Standalone diagnostics can run on systems configured for running either a full machine partition or one or more logical partitions. When running on a logically 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, CD-ROM or network adapter connected to the NIM server that has a standalone diagnostic image) to the partition used to run standalone diagnostics. If you move devices, reboot both partitions. For more information, see “Standalone Diagnostic Operation” on page 141.
- When running diagnostics on an LPAR partition, diagnostics only works with the resources that were assigned to that partition; you should run diagnostics in the partition containing the resource that you wish to test.
- Run Online Diagnostics in Service Mode when possible, unless otherwise directed. The Online Diagnostics perform additional functions, compared to Standalone Diagnostics. The AIX error log and certain SMIT functions are only available when diagnostics are run from the disk drive.
- When running Online Diagnostics, device support for some devices may not have been installed. If this is the case, that device does not appear in the resource list.
- When running Standalone Diagnostics, device support for some devices may be contained on supplemental diagnostic media. If this is the case, the device does not appear in the resource list when running diagnostics unless the supplemental media has been processed.
- Support for some TTY terminals is optionally installed. If you attach a TTY terminal to a system to run diagnostics, it might not work correctly because the AIX support for the terminal might not be installed.

Selecting a Console Display

When you run Standalone Diagnostics and under some conditions, Online Diagnostics, you must select the console display. The diagnostics display instructions on any graphics display and the terminal attached to the S1 serial port.

On systems with an HMC, diagnostics displays on the virtual terminal on the HMC. On an LPAR system, diagnostics displays on the virtual terminal associated with a given partition.

Identifying the Terminal Type to the Diagnostics Programs

Note: This is a different function from selecting a console display.

When you run diagnostics, you must identify what 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. Select **LFT** for adapter-attached displays.

If running diagnostics from a virtual terminal on a system with an HMC, select **VT100** when prompted for the type of terminal emulation.

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 is displayed until either a valid type is entered or the user exits the DEFINE TERMINAL option.

Resetting the Terminal

If the user enters a terminal type that is valid (according to the DEFINE TERMINAL option menu) but is not the correct type for the ASCII terminal being used, you may be unable to read the screen, use the function keys or use the Enter key. These difficulties can be bypassed by pressing Ctrl-C to reset the terminal. The screen display which results from this resetting action varies with the mode which the system is being run:

- Online Normal or Maintenance Mode - The command prompt appears.
- Standalone Mode or Online Service Mode - The terminal type is reset to `dumb`, the Diagnostic Operating Instruction panel displays, and the user is required to go through the DEFINE TERMINAL process again.

Running Standalone Diagnostics from CD-ROM

Consider the following when you run Standalone Diagnostics:

- The diagnostic CD-ROM disc must remain in the CD-ROM drive for the entire time that diagnostics are running.
- The diagnostic CD-ROM disc cannot be ejected from the CD-ROM drive once the diagnostic programs load. The diagnostic CD-ROM disc can only be ejected after the system has been powered off and then powered on (Standalone mode), or after the diagnostics program has terminated (Online concurrent mode). The diagnostic CD-ROM disc must be ejected before attempts to load the diagnostic programs again.
- 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.

Running Standalone Diagnostics from a Network Installation Management (NIM) Server

A *client* system connected to a network with a Network Installation Management (NIM) server, is capable of booting Standalone Diagnostics from the NIM server if the client system is registered on the NIM server, and the NIM boot settings on both the NIM server and the client system are correct.

Notes:

1. For NIM clients that have adapters that would normally require that supplemental media be loaded when standalone diagnostics are run from CD-ROM, the support code for these adapters must be

loaded into the directory pointed to by the NIM SPOT from which you wish to boot that client. Before running standalone diagnostics on these clients from the NIM server, the NIM server system administrator must ensure that any needed support for these devices is loaded on the server.

2. The amount of system memory required to run Standalone Diagnostics from a NIM server using the **bos.diag.rte** fileset at level 4.3.3.25, is 64 MB.

   To determine the fileset level, run the following AIX command at the NIM server (you must have root authority):

   ```
   nim -o showres SPOTNAME | grep bos.diag.rte
   ```

   (Where SPOTNAME is the name of the SPOT from which you want to do a NIM boot (for example, SPOT433).

   Use one of the following methods to determine the amount of available system memory:

   - Run the Display Resource Attributes task for resource.
   - Use the **Config** option under System Management Services (see the system unit service guide).
   - Use the following AIX command:

     ```
     lsattr -E -l mem0
     ```

3. All operations to configure the NIM server require root authority.
4. If you replace the network adapter in the client, the network adapter hardware address for the client must be updated on the NIM server.
5. The Control state (Cstate) for standalone clients on the NIM server should be kept in the Diagnostic Boot has been Enabled state.
6. 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 up in Standalone Diagnostics from the NIM server should there be a problem booting from the disk drive. Refer to the ″Multiboot″ section under SMS chapter in the service guide for the client system to obtain information about setting the bootlist.

NIM Server Configuration

Refer to the *Network Installation Management Guide and Reference* for information on doing the following:

- Register a client on the NIM server.
- Enable a client to run diagnostics from the NIM server.

To verify that the client system is registered on the NIM server and *diagnostic boot* is enabled; from the command line on the NIM server, run the following command:

```
lsnim -a Cstate -Z ClientName
```

Refer to the following table for system responses.

Note: The ClientName is the name of the system on which you are wanting to run the 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 system is registered on the NIM server but not enabled to run standalone diagnostics from the NIM server.
	Note: If the client system is registered on the NIM server but Cstate has not been enabled, no data will be returned.

System Response	Client Status
`0042-053 lsnim: there is no NIM object named "ClientName"`	The client is not registered on the NIM server.

Client Configuration and Booting Standalone Diagnostics from the NIM Server

To run Standalone Diagnostics on a client system from the NIM server, do the following:

1. Remove all removable media (tape or CD-ROM disc).
2. Stop all programs, including the AIX operating system (get help if needed).
3. If you are running standalone diagnostics in a full machine partition, verify with the system administrator and system users that the system unit may be shutdown. Stop all programs including the operating system (refer to the operating system documentation). Verify with the system administrator and system users using that partition that all applications on that partition must be stopped, and the partition ill be rebooted. Stop all programs on that partition including the operating system.
4. If the system is running in a full machine partition, turn on the system unit power. If the system is running on a logically partitioned system, restart the AIX operating system in the partition you wish to run online diagnostics.
5. When the keyboard indicator displays (the word **keyboard** on an ASCII terminal 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 **Utilities**.
8. Depending on the console type, select **RIPL** or **Remote Initial Program Load Setup**.
9. Depending on the console type, select **Set Address** or **IP Parameters**.
10. Enter the client address, server address, gateway address (if applicable), and subnet mask into the Remote Initial Program Load (RIPL). If there is no gateway between the NIM server and the client, set the gateway address to 0.0.0.0. To determine if there is a gateway, either ask the system network administrator or compare the first 3 octets of the NIM server address and the client address. If they are the same, (for example, if the NIM server address is 9.3.126.16 and the client address is 9.3.126.42, the first 3 octets (9.3.126) are the same), then set the gateway address in the RIPL field to 0.0.0.0.

    Note: RIPL is located under the Utility menu in System Management Services (SMS) and should be referred to for information on setting these parameters.
11. If the NIM server is setup to allow the pinging of the client system, use the **ping** option 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 comes back with an *OK* prompt, the client is prepared to boot from the NIM server. If ping returns with a *FAILED* prompt, the client does not proceed with the boot.

    Note: If the ping fails, refer to ″Boot Problems/Concerns″ in the service guide for the system unit. Then follow the steps for network boot problems.

Use the following procedure to temporarily changes the system bootlist so that the network adapter attached to the NIM server network, is first in the bootlist:

1. Exit to the SMS Main screen.
2. Depending on the console type, select **Multiboot** or **Select Boot Devices**.
3. Depending on the console type, select **Boot Sequence** or **Select Boot Devices**.
4. Record the current bootlist settings. (You will have to set the bootlist back to the original settings after running diagnostics from the NIM server.)
5. Change the bootlist so the network adapter attached to the NIM server is first in the bootlist.

6. Exit completely from SMS. The system should start 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 is displays, Standalone Diagnostics has loaded successfully. If the AIX login prompt displays, Standalone Diagnostics did not load. Check the following items:

- The bootlist on the client might be incorrect.
- Cstate on the NIM server might be incorrect.
- There might be network problems 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/Concerns″ in the service guide for the system unit. Then follow the steps for network boot problems.

After running diagnostics, reboot the system and use SMS to change the bootlist sequence back to the original settings.

Locking and Unlocking the Electronic Service Agent

If the system is setup with a Electronic Service Agent, you must lock out the Electronic Service Agent before running diagnostics. This prevents the Electronic Service Agent from using the diagnostics while you are running them. Use the following commands to lock out the Electronic Service Agent:

```
cd /usr/lpp/servdir
ls /usr/lpp/servdir/servdir.lck
```

If a file named **servdir.lck** is listed, the Electronic Service Agent is already locked out. If it is not listed, use the following command to create the file:

```
 /usr/lpp/servdir/servdir.lck
```

Use the following command to check that the **servdir.lck** file was created (if the file is present the Electronic Service Agent is locked out):

```
/usr/lpp/servdir/servdir.lck
```

Use the following commands to unlock the Electronic Service Agent:

```
/usr/lpp/servdir/servdir.analyze reset
rm /usr/lpp/servdir/servdir.lck
```

Use the following command to check that the **servdir.lck** file was deleted (the file should not be present):

```
ls /usr/lpp/servdir/servdir.lck
```

If the file is listed, the Electronic Service Agent is still locked out.

Locking and Unlocking the Service Agent

If the system is setup with a service agent, you must lock out the service agent before running diagnostics.

Note: The system does not report problems while the service agent is locked out. When you complete your service action, be sure to unlock the service agent to allow it to report problems.

Use the following procedure to lock out the service agent:

1. Click the **Administration** folder.
2. Select the **Lockout Machines** option.
3. In the Detail screen, select the system you want to lock out, then click **Lock**.
4. To verify that the system is locked out, click the **Network** folder.

5. Click the Padlock icon to display the lockout status. The system you locked out should have a red X displayed, indicating it is locked out.

Use the following procedure to unlock the service agent:

1. Click the **Administration** folder.
2. Select the **Lockout Machines** option.
3. In the Detail screen, select the system you want to unlock, and click **Unlock**.
4. To verify that the system is unlocked, click the **Network** folder.
5. Click the Padlock icon to display the lockout status. The system you unlocked should not have a red X displayed.

Running Online Diagnostics

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. After the installation of the AIX operating system, all three modes of operation are available.
- The diagnostics cannot be loaded on a system (client) from a server if that system is not set up to IPL from a server over a network, or the server has not been setup to send a service mode IPL of the diagnostics. When the system is set up to IPL from a server, the diagnostics are executed in the same manner as they are from disk.
- When the system is running in a full machine partition, if the diagnostics were loaded from disk or a server, you must shut down the AIX operating system before powering off the system unit to prevent possible damage to disk data. This is done in one of two ways:
  - If the diagnostic programs were loaded in Standalone mode, press the F3 key until DIAGNOSTIC OPERATING INSTRUCTIONS displays; then follow the displayed instructions to shut down the AIX operating system.
  - If the diagnostic programs were loaded in maintenance or concurrent mode, enter the **shutdown -F** command.
- Under some conditions the system may stop, with instructions displayed on attached displays and terminals. Follow the instructions to select a console display.

Running the Diagnostics from a TTY Terminal

Consider the following when you run diagnostics using a TTY-type terminal as the console display:

- See the operator manual for your type of TTY terminal to find the key sequences you need to respond to the diagnostics. For the 3151, refer to the *3151 ASCII Display Station Guide to Operations*, form number GA18-2633. For the 3164, refer to the *3164 ASCII Color Display Station Description*, form number GA18-2617.
- When the diagnostics present display information through the S1 serial port, certain attributes are used. These attributes are set as if the diagnostics were using a 3161 display terminal. Refer to the tables in Appendix D, “General Attributes Required When Using a TTY Terminal”, on page 519 for a list of attributes for the 3161 ASCII Display Terminal and for two other ASCII display terminals commonly used with the system.
- If you have a TTY terminal other than a 3151, 3161 or 3164 attached to the S1 serial port, your terminal may have different names for the attributes. Refer to the tables in Appendix D, “General Attributes Required When Using a TTY Terminal”, on page 519, and use the attribute descriptions to determine the settings for your terminal.

Online Diagnostics Mode of Operation

The Online diagnostics can be run in three modes:

- *Service Mode* allows checking of most system resources.

- *Concurrent Mode* allows the normal system functions to continue while selected resources are being checked.
- *Maintenance Mode* allows checking of most system resources

Running the Online Diagnostics in Service Mode (Service Mode IPL)

Service mode provides the most complete checkout of the system resources. This mode also requires that no other programs be running on the system. All supported system resources except the SCSI adapter, and the disk drives used for paging can be tested. However, the system memory and the processor are only tested during power-on self-test (POST).

Error log analysis is done in service mode when you select the **Problem Determination** option on the DIAGNOSTIC MODE SELECTION menu.

To run the Online diagnostics in service mode, use the following steps:

1. Stop all programs including the AIX operating system (get help if needed).
2. Remove all tapes, diskettes, and CD-ROM discs.
3. If the system is running in a full machine partition, turn off the system unit power.
4. If the system is running in a full machine partition, turn on the system unit power. If the system is running on a logically partitioned system, restart the AIX operating system in the partition you wish to run online diagnostics.
5. After the first POST indicator appears on the system unit's console, press F6 on the directly-attached keyboard or 6 on the TTY keyboard to indicate that diagnostics are to load.

   Note: The term *POST indicator* refers to the icons (graphic display) or device mnemonics (ASCII terminal) that are displayed while the POST is running.
6. Enter any requested password.
7. Follow any instructions to select a console.
8. After the diagnostic controller loads, DIAGNOSTIC OPERATING INSTRUCTIONS appear on the console display.
9. Follow the displayed instructions to test the desired resources.
10. When testing is complete; use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS.
11. Press the F3 key (from a defined terminal) or press 99 (for an undefined terminal) to shut down the diagnostics before turning off the system unit (if running in a full machine partition) or rebooting the partition (if running one or more logical partitions).

    Note: Pressing the F3 key (from a defined terminal) produces a Confirm Exit menu which offers two options: continuing with the shut down by pressing F3; or returning to diagnostics by pressing Enter.

    For undefined terminals, pressing 99 produces a full screen menu which offers two options: continuing with the shutdown by pressing 99 and then Enter; or returning to diagnostics by pressing Enter.

Running the Online Diagnostics in Concurrent Mode

Use Concurrent mode to run Online diagnostics on some of the system resources while the system is running normal system 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
- Any graphics-related device running X, CDE, or windowing environment
- Memory
- Processor.

Three 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 onto the AIX operating system and have proper authority to issue the commands (if needed, get help).

The **diag** command loads the diagnostic controller and displays the Online diagnostic menus.

To run Online diagnostics in concurrent mode, use the following steps:

- Log on to the AIX operating system as root or use CE login.
- Enter the **diag** command.
- When the DIAGNOSTIC OPERATING INSTRUCTIONS display, follow the instructions to test the desired resources.
- When testing is complete, use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS. Press the F3 key again to return to the operating system prompt. Be sure to vary on any resource you had varied to off.
- Press the Ctrl-D key sequence to log off from root or superuser.

Running the Online Diagnostics in 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 operating system be stopped so 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.

The **shutdown -m** command is used to stop all activity on the AIX operating system and put the 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.

To run the Online diagnostics in maintenance mode, you must be logged in to the customer's version of the AIX operating system as *root* or *superuser* and use the **shutdown -m** and **diag** commands. Use the following steps to run the Online diagnostics in maintenance mode:

1. Stop all programs except the AIX operating system (get help if needed).
2. Log in to the AIX operating system as root or superuser.

3. Enter the **shutdown -m** command.
4. When a message indicates the system is in maintenance mode, enter the **diag** command.

   Note: It may be necessary to set *TERM* type again.
5. When DIAGNOSTIC OPERATING INSTRUCTIONS display, follow the displayed instructions to test the desired resources.
6. When testing is complete, use the F3 key to return to DIAGNOSTIC OPERATING INSTRUCTIONS. Then press the F3 key again to return to the AIX operating system prompt.
7. Press Ctrl-D to log off from root or superuser.

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 and other resources that can not be tested by the Online Diagnostics.

Note: Error Log Analysis is not done by the Standalone Diagnostics. If running from the diagnostic CD-ROM disc, the CD-ROM drive and the SCSI controller that controls it cannot be tested by the Standalone Diagnostics.

LPAR Considerations for Standalone Diagnostics

- To run standalone diagnostics on an full machine partition, you must reboot the whole system. However, for an LPAR system, you may boot standalone diagnostics in a given partition or on the entire system (which is same procedure as on an full machine partition).
- For an LPAR partition, before running standalone diagnostics on a given partition, the user must move the device from the 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 an LPAR system are moved on a slot basis. If the CD-ROM drive is moved from one partition to another, all SCSI devices on the same SCSI adapter card to which the CD-ROM drive is attached must also 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.
- 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 an LPAR partition.

Running the Standalone Diagnostics from CD-ROM

To run Standalone Diagnostics in service mode, use the following steps:

1. If you are running standalone diagnostics in a full machine partition, verify with the system administrator and system users that the system unit may be shut down. Stop all programs including the AIX operating system (Refer to the AIX operating system documentation for information on the **shutdown** command). If you are running standalone diagnostics in an LPAR partition, make the CD-ROM drive available to the partition used to run standalone diagnostics (refer to the *Hardware Maintenance Console for Operations Guide* for more information). Verify with the system administrator and system users using that partition that all applications on that partition must be stopped, and the partition will be rebooted. Stop all programs on that partition, including the operating system.
2. Remove all tapes, diskettes, and CD-ROMs.
3. Turn off the system unit power.
4. If running standalone diagnostics in a full machine partition, power off the system unit.
5. If running standalone diagnostics in a full machine partition, power on the system unit. If running standalone diagnostics in an LPAR partition, reboot that partition.
6. When the keyboard POST indicator appears, press the F5 key on the directly attached keyboard, or the number 5 key on the TTY keyboard.
7. Enter any requested passwords.

8. Follow any instructions to select the console.
9. After the diagnostic controller loads, DIAGNOSTIC OPERATING INSTRUCTIONS appear on the console display.
10. Follow the displayed instructions to test the desired resources.
11. When testing is complete, use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS.

General Information about Multiple Systems

This topic presents general information for anyone needing to run the diagnostic programs on a system unit that is attached to another system. This information is intended for use by both the operator of the system and the service representative.

These considerations and actions are not detailed step-by-step instructions, but are used to ensure that you have considered the attached system before you run diagnostics on this system unit.

You are directed to the detailed procedures for the various activities as needed.

These guidelines generally present considerations for the following:

- Starting and stopping the communications with the other system
- Considerations before running diagnostics on the system
- Analyzing the error log information
- Using the wrap plugs with the diagnostics

When this system unit is attached to another system, be sure you isolate this system unit before stopping the operating system or running diagnostic programs. Some system-cabling changes (such as installing wrap plugs or removing a device from the configuration) may require action by the operator of the attached system before making the cabling changes on this system.

Determining System Architecture

Location codes and many of the service aids are restricted by the system model architecture (platform). If location codes or service aids are needed to complete servicing your system, it may be necessary to know which platform your system is using.

This manual deals with the following platforms:

- CHRP (Common Hardware Reference Platform)
- RSPC (PowerPC Reference Platform)

Notes:

1. The service aids in this manual may be identified as being CHRP or RSPC only. Assume the service aid can be accessed on either platform unless a note is included, stating the service aid is CHRP or RSPC only.
2. Chapter 29, “Diagnostics Numbers and Location Codes”, on page 191 contains two location code sections. Refer to “Location Codes for RSPC Model Architecture System Units” on page 206 for RSPC location codes and “Location Codes for CHRP Model Architecture System Units” on page 207 for CHRP location codes.

To determine the type of platform on which you are working, enter one of the following commands.

- If you are running AIX 4.2.1 or later; from an AIX shell enter: **lscfg | pg**. A screen displays a message similar to one of the following:

```
Model Architecture: RS6k
Model Implementation: Uniprocessor, MCA bus

Model Architecture: RSPC
Model Implementation: Uniprocessor, PCI bus

Model Architecture: CHRP
Model Implementation: Multiple Processor, PCI bus

Model Architecture: OEM
```

- If you are running AIX 4.2.1 or later diagnostics, select **Display Configuration and Resource List** from the Task Selection Menu.
- On any AIX operating system when you are logged in with root authority, run the **bootinfo -p** command. The system platform type is returned.
- On system units that support the *OK* prompt, and you are running AIX Diagnostics from Standalone or Online mode, after turning on power and the first image appears, but before the audible tone sounds, do the following:
  - Press the F8 key. An `OK` prompt appears.
  - At the prompt, enter the **dev /** command. A menu containing the `device_type` appears. The platform designation (CHRP or RSPC) is identified.

High-Availability SCSI

A high-availability SCSI configuration consists of two system units or CPU drawers connected to a common set of SCSI devices. The configuration provides high availability because either system unit or CPU drawer can continue to access the common devices while the other system is unavailable.

The actions needed to isolate a particular system unit or device from the configuration depends on the software controlling the systems and devices. Therefore, be sure you use the software documentation to prepare the configuration before turning off a system unit or device.

High-Availability Cabling

For additional cabling information, refer to *Adapters, Devices, and Cable Information for Multiple Bus Systems*.

Diagnostic Summary

The following topics provide summary type information about some features of the diagnostics.

Memory and Processor Testing

- Memory and Fixed-Point Processors are only tested during POST.
- A complete memory test is run during POST.
- The POST only halts and reports problems that prevent the system from booting.
- All other problems are logged for later analysis by the Sysplanar and Memory Diagnostics.

Sysplanar and Memory Diagnostics

- Analyzes POST and firmware errors that were detected during IPL, but did not prevent the system from booting.
- Performs error log analysis if the diagnostics are running online in problem determination mode or error log analysis mode.

Error Log Analysis

- Error Log Analysis is analysis of the AIX Error Log entries.
- Error Log Analysis is part of the diagnostic applications. The analysis is started by selecting a device from the DIAGNOSTIC SELECTION menu; then using the **diag** command or selecting the Run Error Log Analysis task.
- Error Log Analysis is only performed when running online diagnostics.
- Error Log Analysis*is not* performed when running diagnostics from removable media.
- Error Log Analysis only reports problems if the errors have reached defined thresholds. Thresholds can be from 1 to 100 depending on the error.
- Permanent errors do not necessarily mean a part should be replaced.
- Automatic Error Log Analysis (**diagela**) provides the capability to do error log analysis whenever a permanent hardware error is logged.

Diagnostic Modes

The Diagnostic Modes consist of Problem Determination Mode and System Verification Mode.

- Problem Determination Mode runs all tests unless the resource is being used. If a resource is being used, a screen appears informing the user that the resource needs to be made available for testing. If a problem is not found, then Error Log Analysis is performed.
- In Problem Determination Mode, Error Log Analysis is performed even if a resource is being used.
- System Verification Mode does not perform Error Log Analysis. Run this mode when you are doing a repair verification.

Diagnostics Tasks and Resources

Tasks are operations that can be performed on a resource. Running Diagnostics, Displaying VPD, or Formatting a Device, are examples of tasks. Service aids are also considered tasks. Tasks and service aids are further described in Chapter 28, “Introducing Tasks and Service Aids”, on page 151.

Resources are devices used by the system unit. Diskette drive and CD-ROM drive are examples of resources.

The FUNCTION SELECTION menu contains two selections allowing either all resources, or all tasks to be displayed. When task selection is made and a task has been selected, a list of supporting resources displays. Alternatively, when resource selection is made, and a resource or group of resources are selected, a list of common tasks displays. Also, to aid with backward compatibility, the FUNCTION SELECTION menu contains Diagnostic routines and Advanced Diagnostic routines selection.

The Display or Change Diagnostic Run Time Options task can be used to set advanced mode diagnostics, looping capability, and error log analysis (ELA) mode when running diagnostics from the Task Selection menu.

diag Command Line Options

The following describe the Version 4.2 and later diagnostic command line options:

```
diag [[-a] | [-s[-c]] [-E Days] [-e] |
[-d Device] [-v] [-c] [-e] [-A]] |
[-B[-c]] | [-T taskname] |-S] testsuite]
```

Flags

The **diag** command line flags are as follows:

-a Processes any change in the hardware configuration by asking if missing resources have been remove, turned off, and so on.

-A Specifies Advanced mode. You must also specify a device with the **-d** flag.

-B Instructs the diagnostics to run the base system test. Error log analysis is also done on areas in the base system that supports error log analysis.

-c Indicates that the machine will not be attended. No questions are asked. Results are written to standard output. Must also use an option flag (**-d**, **-B**, **-s**) that specifies a device to be tested.

-d *Device*
Specifies the device to run diagnostics on.

-E *Days*
Specifies the number of days to use when searching the error log during Run Error Log Analysis. The flag works with any other flag.

-e Performs error log analysis if supported on the selected device. No tests are performed. May be used with the **-d** flag, otherwise the resource selection menu is displayed. If used with the **-v** flag, the **-v** flag takes precedence and the **-e** flag is ignored.

-S *testsuite*
Indicates a particular Test Suite of devices to test:

1. Base System
2. I/O Devices
3. Async Devices
4. Graphic Devices
5. SCSI Devices
6. Storage Devices
7. Commo Devices
8. Multimedia Devices

-s Runs diagnostics on all resources.

-T *taskname*
Fastpath to specific task to run. Current fastpath tasks are the following:

- format - Format Media Task

- certify - Certify Media Task
- download - Download Microcode Task
- disp_mcode - Display Microcode Level Task
- chkspares - Spare Sector Availability Task
- identify - PCI RAID Physical Disk Identify Task

Note: Tasks are platform and device dependent. Some tasks may not be available on the system.

-v Runs diagnostics in System Verification Mode, no error log analysis performed. The default is Problem Determination mode that tests the device and runs error log analysis. If used with the **-e** flag, the **-v** flag takes precedence and the **-e** flag is ignored. Must be used with the **-d** flag to specify a device to run diagnostics on.

Default execution mode is non-advanced mode.

SCSI RAID Descriptions and Diagnostic Procedures

Viewing the Existing Firmware Level Installed on a SCSI RAID Adapter

Below is an example of the steps one might perform to check the microcode level on the RAID adapter:

1. Log in as root (if not already root).
2. Type `lsdev -C | grep scraid`. This lists all the SCSI RAID adapters installed or defined to the system.
3. Identify the number (for example, `scraid0`) of the card for which you wish to check the microcode level.
4. Type `lscfg -vl scraid`*X* (where *X* is the number of the RAID adapter from above).
5. Look at the Loadable Microcode Level field, compare it to the desired level.

Updating the Firmware on a SCSI RAID Target Adapter

This procedure assumes that you have obtained the SCSI RAID adapter microcode you wish to download, and it is located either on a diskette, or in the **/etc/microcode** directory of the system containing the RAID adapter you want to update. This section describes the method for transferring the new firmware into the target adapter. Each flash update should complete within one minute.

Attention: Do not power off the target server at any time before the flash process completes. If power is removed or the system is reset while flash_update is being run, irrecoverable failures may occur. This could require return of the adapter for exchange.

Diagnostic menu procedure:

1. Log in as root or use CE login (if not already logged in).
2. Type `diag`
3. Select **Task Selection -> Download Microcode**
4. When **Resource Selection** menu displays select **scraid***X*, (Where *X* is the ID of the desired adapter) and press **F7**.
5. When **Display Microcode Level** menu displays select **Adapter**.
6. When **Install Microcode** menu displays select **Functional Microcode**.
7. If the current microcode level on the adapter is below the level you want to install select **Latest Level** (that is, 4.20.18 is currently on the adapter and you wish to install 4.70.11).

   or

   If the current microcode level on the adapter is greater than the level you wish to install select **Previous Level** (that is, 3.70.01 is currently on the adapter and you wish to install 3.12.01).
8. Select where the microcode is located either, **/etc/microcode** directory or diskette.

Command Line procedure:

Use one of the two procedures listed, depending on which level of microcode you want to install relative to the existing level it has:

Note: You must be logged in as root' or use CE login to perform these commands.

- If the current microcode level on the adapter is below the level you wish to install use the following command:

  ```
  diag -c -d scraidX -T"download"
  ```

  Where X is the ID of the desired adapter, for example, 4.20.18 is currently on the adapter and you wish to install 4.70.11.
- If the current microcode level on the adapter is greater than the level you wish to install use the following command:

  ```
  diag -c -d scraidX -T"download -P"
  ```

  Where X is the ID of the desired adapter, for example 3.70.01 is currently on the adapter and you wish to install 3.12.01.

After following either the **Diagnostic Menu** or the **Command Line** procedure, you should receive a confirmation that microcode has been updated. If you do not, then make sure the adapter is not in use and repeat the appropriate diagnostic step shown above.

To confirm the new installed level of firmware on the adapter, use the "Viewing the Existing Firmware Level Installed on a SCSI RAID Adapter" on page 146 procedure.

Displaying the VPD Information of a Disk Drive in a SCSI RAID Subsystem.

You may use any of three ways to display the VPD information of a drive in a SCSI RAID.

Diagnostics VPD Display:

The first way is through diagnostics. However, this cannot be performed concurrently with normal RAID operation. The RAID volume group must be varied off to run from diagnostic menus or diagnostics from the command line. A command the customer (logged in as root) might use to vary off the volume group is: `varyoffvg` *RAID_volumegroup* (where *RAID_volumegroup* is the volume group containing the RAID drive you wish to test).

Note: The underlying filesystems may need to be unmounted before varying off the volume group can complete successfully.

Diagnostic Menu method:

1. Log in as root or use CE login.
2. Type `diag`.
3. Select **Task Selection -> PCI Physical Disk Identify**.
4. When the **Resource Selection** menu displays select **scraidX**, (Where X is the ID of the desired adapter) Press **F7**.
5. Look at the ROS and RAM code levels. This is drive microcode level.
6. Ask the customer (logged on as root) to type `varyonvg RAID_volumegroup` where `RAID_volumegroup` is the name of the volumegroup you previously varied off. Any filesystem unmounted will have to be remounted.

Command Line method:

Logged in as root or use CE login, type in the command:

```
diag -cd scraidX -T"identify"
```

Where X is replaced by the number of the desired adapter. A list containing the VPD information of all the drives in the RAID subsystem will be displayed on the screen.

Look at the ROS and RAM code levels. This is drive microcode level. Compare this to the desired level.

When you are done, ask customer (logged on as root) to vary on the volume group using command:

```
varyonvg RAID_volumegroup
```

where `RAID_volumegroup` is the name of the volumegroup you previously varied off. Any filesystem unmounted will have to be remounted.

Note: For either of these two methods, if you see the error message: `An adapter configuration error was detected.... Run the Disk Array Manager to resolve the adapter configuration error.`

1. Log in as root (if not already root).
2. Type `smit pdam`.
3. Select **Recovery Options -> Resolve PCI SCSI RAID Adapter Configuration -> Display/Accept Configuration Changes** .
4. Select the appropriate SCSI RAID adapter containing the drive.
5. Select **YES** for the **Display only** option.

   Attention: The following steps will change the array's configuration. If you have any doubts, do not proceed.
6. If the proposed changes to the array configuration match what is desired, press **F3** and Select **NO** for **Display Only**.
7. If the proposed changes to the array configuration do *not* match what is desired, if not, press **F10** to exit.

SCSI RAID Manager VPD Display method:

The third way to display VPD is through the **scraidmgr**. This can be performed while the RAID array is operational.

From the AIX command prompt, ask the customer to:

1. Log in as root (if not already root).
2. Type `smit pdam`.
3. Select **Change/Show PCI RAID Drive Status -> Display VPD Information**.
4. Select the appropriate RAID adapter.
5. Select the drives from that adapter one at a time.
6. Look at the ROS and RAM code levels. This is drive microcode level. Compare this to the level you need on the adapter.

Updating the Microcode on a Disk in a SCSI RAID Subsystem

Once you have downloaded the desired microcode, follow the readme and place the microcode image in the **/etc/microcode** directory or on a diskette. With the RAID volume group varied off, you can flash the drives through the following process:

Note: The underlying filesystems may need to be unmounted before varying off the volume group can complete successfully. Then, the volume group containing the disk must be varied off. A command the customer (logged in as root) might use to vary off the volume group is:

```
varyoffvg RAID_volumegroup
```

Where `RAID_volumegroup` is the volume group containing the RAID drive you wish to test. When you are done, ask customer (logged on as root) to vary on the volume group using command:

```
varyonvg RAID_volumegroup
```

Where `RAID_volumegroup` is the name of the volume group you previously varied off. Any filesystem unmounted will have to be remounted.

Diagnostic Menu Method

1. Log in as root or use CE login
2. Type `diag`.
3. Select **Task Selection -> Download Microcode**.
4. When Resource Selection menu displays select **scraidX**, (Where X is the ID of the desired adapter) and press **F7**.
5. When **Install Microcode** menu displays select **Physical Disks**.
6. Select each drive for which microcode is to be flashed by pressing Enter on those drives. Or, select **All drives** to update every drive. Press **F7** to commit.
   - If the current microcode level on the drive is below the level you wish to install select **Latest Level** (for example, S9HA is currently on the drive and you wish to install S9RA).
   - If the current microcode level on the drive is greater than the level you wish to install select **Previous Level** (for example, S9RA is currently on the drive and you wish to install S9HA).

   Note: Microcode levels are consecutive going from 0-9 then A-Z. So, level S9HA would be a later level than S96F.
7. Select the location where the microcode image is stored (from above).
   - On system's **/etc/microcode** directory
   - On a diskette
8. A message will be displayed if download was successful or failed.

Command Line Method:

Log in as root or use CE login, then type the command:

```
diag -c -d scraidX -T "download {-l chID | -A} [-D] [-P]
```

where:

-A all disk drives

-D Microcode is on diskette (default to /etc/microcode directory)

-I RAID disk drive-physical disk channel/ID (example 27)

-P Download the previous level of microcode (default to latest level)

For example, the command:

```
diag -c -d scraid0 -T"download -l 28"
```

downloads microcode from **/etc/microcode** to the drive with channel/ID 28.

Displaying and Updating the Microcode on an External Enclosure (2104) or Backplane in a SCSI RAID Subsystem

Note: Microcode download for backplanes only works if a 4-Channel PCI SCSI RAID adapter is installed with at least level 50 of the diagnostics device driver (devices.pci.14102e00.diag.4.3.3.50). Obtain microcode for the external enclosure or backplane on a diskette or in the **/etc/microcode** directory on the system.

Note: The RAID volume group must be varied off in order to display and update the backplane microcode.

A command the customer (logged in as root) might use to vary off the volume group is:

```
varyoffvg RAID_volumegroup
```

where `RAID_volumegroup` is the volume group containing the RAID drive you wish to test.

Note: The underlying filesystems may need to be unmounted before varying off the volume group can complete successfully.

Diagnostic Menus

When you are done, ask customer (logged in as root) to vary on the volume group using the command: ″

```
varyonvg [RAID_volumegroup]
```

where RAID_volumegroup is the name of the volume group you previously varied off.

Any file system unmounted will have to be remounted.

To update enclosure microcode using Diagnostic Menus:

1. Log in as root or use CE login.
2. Type `diag`.
3. Select **Task Selection -> Download Microcode**.
4. Select the appropriate **scraid** adapter attached to the enclosure.
5. Select **Backplanes**.
6. A list of all the backplanes attached to the adapter will be displayed. Press **Enter** to select the appropriate backplane(s) or to select all backplanes. Press **F7** to commit.
7. Select **Latest Level** if updating to a higher level of microcode **Previous Level** if updating to a lower level of microcode.
8. A message will be displayed noting whether the microcode download was successful or it failed.

Chapter 28. Introducing Tasks and Service Aids

The AIX Diagnostic Package contains programs that are called *Tasks*. Tasks can be thought of as performing a specific function on a resource; for example, running diagnostics or performing a service aid on a resource. This chapter describes the Tasks available in AIX Diagnostics Version 4.2 and later.

Notes:

1. Many of these programs work on all system model architectures. Some programs are only accessible from Online Diagnostics in Service or Concurrent mode, while others might be accessible only from Standalone Diagnostics. Still other programs might only be supported on a particular system architecture, such as CHRP (Common Hardware Reference Platform) or RSPC (PowerPC Reference Platform). Refer to “Determining System Architecture” on page 143 to identify the platform type of your system unit.
2. If the system is running on a logically partitioned system, the following tasks can be executed only in a partition with service authority:
   - Configure Reboot Policy
   - Configure Remote Maintenance Policy
   - Configure Ring Indicate Power On
   - Configure Ring Indicate Power-On Policy
   - Update System or Service Processor Flash
   - Save or Restore Hardware Management Policies
   - Configure Scan Dump Policy

To perform one of these tasks, use the **Task Selection** option from the FUNCTION SELECTION menu.

After a task is selected, a resource menu may be presented showing all resources supported by the task.

A fast-path method is also available to perform a task by using the **diag** command and the **-T** flag. By using the fast path, the user can bypass most of the introductory menus to access a particular task. The user is presented with a list of resources available to support the specified task. The fast-path tasks are as follows:

- Certify - Certifies media
- Chkspares - Checks for the availability of spare sectors
- Download - Downloads microcode to an adapter or device
- Disp_mcode - Displays current level of microcode
- Format - Formats media
- Identify - Identifies the PCI RAID physical disks
- IdentifyRemove - Identifies and removes devices (Hot Plug)

To run these tasks directly from the command line, specify the resource and other task-unique flags. Use the descriptions in this chapter to understand which flags are needed for a given task.

Tasks

The following tasks are described in this chapter:

- Add Resource to Resource List
- AIX Shell Prompt
- Analyze Adapter Internal Log
- Backup and Restore Media
- Certify Media
- Change Hardware Vital Product Data
- Configure Dials and LPF Keys
- Configure ISA Adapters

- Configure Reboot Policy
- Configure Remote Maintenance Policy
- Configure Ring Indicate Power On (RSPC)
- Configure Ring Indicate Power-On Policy
- Configure Service Processor (RSPC)
- Configure Scan Dump Policy
- Configure Surveillance Policy
- Create Customized Configuration Diskette
- Delete Resource from Resource List
- Disk Maintenance
- Display Configuration and Resource List
- Display Firmware Device Node Information
- Display Hardware Error Report
- Display Hardware Vital Product Data
- Display Machine Check Error Log
- Display Microcode Level
- Display Multipath I/O (MPIO) Device Configuration
- Display or Change Bootlist
- Display or Change Diagnostic Run Time Options
- Display Previous Diagnostic Results
- Display Resource Attributes
- Display Service Hints
- Display Software Product Data
- Display System Environmental Sensors
- Display Test Patterns
- Display USB Devices
- Download Microcode
- Fibre Channel RAID Service Aids
- Flash SK-NET FDDI Firmware
- Format Media
- Gather System Information
- Generic Microcode Download
- Hot Plug Task
- Identify Indicators
- Identify and Remove Resource Task (See ″Hot Plug Task″ for AIX 4.3.3.10 or higher)
- Identify and System Attention Indicators
- Local Area Network Analyzer
- Log Repair Action
- Periodic Diagnostics
- PCI SCSI Disk Identify Array Manager
- PCI RAID Physical Disk Identify
- Process Supplemental Media
- Run Diagnostics
- Run Error Log Analysis
- Run Exercisers
- Save or Restore Hardware Management Policies
- Save or Restore Service Processor Configuration (RSPC)
- SCSI Bus Analyzer
- SCSI RAID Physical Disk Status and Vital Product Data
- SCSD Tape Drive Service Aid
- Spare Sector Availability
- SSA Service Aid
- System Fault Indicator
- System Identify Indicator
- Update Disk-Based Diagnostics
- Update System or Service Processor Flash

- Update System Flash (RSPC)
- 7135 RAIDiant Array Service Aids
- 7318 Serial Communication Network Server

Add Resource to Resource List

Use this task to add resources back to the resource list.

Note: Only resources that were previously detected by the diagnostics and deleted from the Diagnostic Test List are listed. If no resources are available to be added, then none are listed.

AIX Shell Prompt

Note: Use this service aid in Online Service Mode only.

This service aid allows access to the AIX command line. To use this service aid, the user must know the root password (when a root password has been established).

Note: Do not use this task to install code or to change the configuration of the system. This task is intended to view files, configuration records, and data. Using this service aid to change the system configuration or install code can produce unexplained system problems after exiting the diagnostics.

Analyze Adapter Internal Log

The PCI RAID adapter has an internal log that logs information about the adapter and the disk drives attached to the adapter. Whenever data is logged in the internal log, the device driver copies the entries to the AIX system error log and clears the internal log.

The Analyze Adapter Internal Log service aid analyzes these entries in the AIX system error log. The service aid displays the errors and the associated service actions. Entries that do not require any service actions are ignored.

When running this service aid, a menu is presented to enter the start time, the end time, and the file name. The start time and end time have the following format: [*mmddHHMMyy*]. (where *mm* is the month (1-12), *dd* is the date (1-31) *HH* is the hour (00-23) *MM* is the minute (00-59), and *yy* is the last two digits of the year (00-99). The file name is the location where the user wants to store the output data.

To invoke the service aid task from the command line, type:

`diag -c -d devicename -T "adapela [-s start date -e end date]`

Flag	Description
-c	Specifies not console mode.
-d *devicename*	Specifies the device whose internal log you want to analyze (for example, `SCRAID0`)
-s *start date*	Specifies all errors after this date are analyzed.
-e *end date*	Specifies all errors before this date are analyzed.
-T	Specifies the Analyze Adapter Internal Log task

Note: To specify a file name from the command line, use the redirection operator at the end of the command to specify where the output of the command is to be sent, for example `> filename` (where *filename* is the name and location where the user wants to store the output data (for example, `/tmp/adaptlog`).

Backup and Restore Media

This service aid allows verification of backup media and devices. It presents a menu of tape and diskette devices available for testing and prompts for selecting the desired device. It then presents a menu of available backup formats and prompts for selecting the desired format. The supported formats are **tar**, **backup**, and **cpio**. After the device and format are selected, the service aid backs up a known file to the selected device, restores that file to **/tmp**, and compares the original file to the restored file. The restored file remains in **/tmp** to allow for visual comparison. All errors are reported.

Certify Media

This task allows the selection of diskette, DVD-RAM media, or hard files to be certified. Normally, this is done under the following conditions:

- To determine the condition of the drive and media
- To verify that the media is error free after a Format Service Aid has been run on the media

Normally, run certify if after running diagnostics on a drive and its media, no problem is found, but you suspect that a problem still exists.

Hard files can be connected either to a SCSI adapter (non-RAID) or a PCI SCSI RAID adapter. The usage and criteria for a hard file connected to a non-RAID SCSI adapter are different from those for a hard file connected to a PCI SCSI RAID adapter.

Certify Media can be used in the following ways:

- Certify Diskette

  This selection enables you to verify the data written on a diskette. When you select this service aid, a menu asks you to select the type of diskette being verified. The program then reads all of the ID and data fields on the diskette one time and displays the total number of bad sectors found.
- Certify DVD-RAM media

  This selection reads all of the ID and data fields. It checks for bad data and counts all errors encountered. If an unrecovered error occurs, or recovered errors exceed the threshold value, the data on the media should be transferred to other media and the original media should be discarded.

  The Certify service aid will display the following information:
  - Capacity in bytes
  - Number of Data Errors Not Recovered
  - Number of Equipment Check Errors
  - Number of Recovered Errors

  If the drive is reset during a certify operation, the operation is restarted.

  If the drive is reset again, the certify operation is terminated, and the user is asked to run diagnostics on the drive.

  This task can be run directly from the AIX command line. See the following command syntax: `diag -c -d -T certify`

Flag	Description
-c	No console mode
-d	Specifies a device
-T	Specifies the certify task
- Certify Hardfile Attached to a Non-RAID SCSI Adapter

  This selection reads all of the ID and data fields. It checks for bad data and counts all errors encountered. If there are unrecovered data errors that do not exceed the threshold value, the hard file

must be formatted and certified. If the unrecovered data errors, recovered data errors, recovered and unrecovered equipment errors exceed the threshold values, the disk must be replaced.

It also makes 2000 random seeks after the read certify of the surface completes. If a disk times out before finishing the random seeks, then the disk needs to be replaced. The random seeks also count all errors encountered.

The Certify service aid will display the following information:

– Drive capacity in megabytes.
– Number of Data Errors Recovered.
– Number of Data Errors Not Recovered.
– Number of Equipment Checks Recovered.
– Number of Equipment Checks Not Recovered.

This task can be run directly from the AIX command line. See the following command syntax: `diag -c -d` *deviceName* `-T "certify"`

Flag	Description
-c	No console mode
-d	Specifies a device
-T	Specifies the certify task

- Format and/or Erase Hardfile Attached to a Non-RAID SCSI Adapter

  Attention: The following commands *will* change the content of the hardfile. Be sure to back up data prior to running the command, and take care in choosing the hardfile upon which you run this task.

  – Hardfile Format

    Writes all of the disk. The pattern written on the disk is device-dependant; for example, some drives may write all 0s, while some may write the hexadecimal number 5F. No bad-block reassignment occurs.

  – Hardfile Format and Certify

    Performs the same function as Hardfile Format. After the format is completed, Certify is run. Certify then reassigns all bad blocks encountered.

  – Hardfile Erase Disk

    This option can be used to overwrite (remove) all data currently stored in user-accessible blocks of the disk. The Erase Disk option writes one or more patterns to the disk. An additional option allows data in a selectable block to be read and displayed on the system console.

    To use the Erase Disk option, specify the number (0-3) of patterns to be written. The patterns are written serially; that is, the first pattern is written to all blocks. Then the next pattern is written to all blocks, overlaying the previous pattern. A random pattern is written by selecting **Write Random Pattern**.

    Note: The Erase Disk service aid has not been certified as meeting the Department of Defense or any other organization's security guidelines.

    To overwrite the data on the drive, use the following steps:

    1. Select **Erase Disk**.
    2. Do a format without certify.
    3. Select **Erase Disk** to run it a second time.

    For a newly installed drive, you can ensure that all blocks on the drive are overwritten with your pattern if you use the following procedure:

    1. Format the drive.
    2. Check the defect MAP by running the Erase Disk selection.

Note: If you use Format and Certify option, there may be some blocks which get placed into the grown defect MAP.

3. If there are bad blocks in the defect MAP, record the information presented and ensure that this information is kept with the drive. This data is used later when the drive is to be overwritten.
4. Use you drive as you would normally.
5. When the drive is no longer needed and is to be erased, run the same version of the Erase Disk selection which was used in step 2.

   Note: Using the same version of the service aid is only critical if any bad blocks were found in step 3.
6. Compare the bad blocks which were recorded for the drive in step 3 with those that now appear in the grown defect MAP.

   Note: If there are differences between the saved data and the newly obtained data, then all sectors on this drive cannot be overwritten. The new bad blocks are not overwritten.
7. If the bad block list is the same, continue running the service aid to overwrite the disk with the chosen pattern(s).

This task can be run directly from the AIX command line. See the command syntax: `diag -c -d` *`deviceName`* `-T "format [-s* fmtcert | erase -a {read | write}] [-F]*`

Flag	Description
fmtcert	Formats and certifies the disk.
erase	Overwrites the data on the disk.
*	Available in no-console mode only.
-F	Force the disk erasure even if all blocks cannot be erased due to errors accessing the grown defect map.

Note: The Erase Disk option in command line mode uses default values. To selectively read or write, use the **diag** command in console mode.

- Certify Hardfile attached to a PCI SCSI RAID Adapter

  This selection is used to certify physical disks attached to a PCI SCSI RAID adapter. Certify reads the entire disk and checks for recovered errors, unrecovered errors, and reassigned errors. If these errors exceed the threshold values, the user is prompted to replace the physical disk.

  This task can be run directly from the AIX command line. See the following command syntax: `diag -c -d` *`RAIDadapterName`* `-T "certify {-l` *`chID`* `| -A}"`

Flag	Description
-c	No console mode
-d	Specifies the RAID adapter to which the disk is attached
-T	Specifies the certify task and its parameters
-l	Specifies physical Disk channel/ID (for example: -l 27)
-A	All disks

Change Hardware Vital Product Data

Use this service aid to display the Display/Alter VPD Selection Menu. The menu lists all resources installed on the system. When a resource is selected, a menu displays that lists all the VPD for that resource.

Note: The user cannot alter the VPD for a specific resource unless the VPD is not machine-readable.

Configure Dials and LPF Keys

Note: The Dials and LPF Keys service aid is not supported in standalone mode (CD-ROM and NIM) on systems with 32 MB or less memory. If you have problems in standalone mode, use the hardfile-based diagnostics.

This service aid provides a tool for configuring and removing dials and LPF keys to the asynchronous serial ports.

This selection invokes the SMIT utility to allow Dials and LPF keys configuration. A TTY must be in the available state on the async port before the Dials and LPF keys can be configured on the port. The task allows an async adapter to be configured, then a TTY port defined on the adapter. Dials and LPF keys can then be defined on the port.

Before configuring Dials or LPF keys on a serial port, you must remove all defined TTYs. To determine if there are any defined TTYs, select **List All Defined TTYs**. Once all defined TTYs have been removed, then add a new TTY and configure the Dials or LPF keys.

Configure ISA Adapter

This task uses SMIT to identify and configure ISA adapters on systems that have an ISA bus and adapters.

Diagnostic support for ISA adapters not shown in the list may be supported from a supplemental diskette. You can use the Process Supplemental Media task to add ISA adapter support from a supplemental diskette.

Whenever an ISA adapter is installed, this service aid must be run and the adapter configured before the adapter can be tested. You must also run this service aid to remove an ISA adapter from the system whenever an ISA adapter is physically removed from the system.

If diagnostics are run on an ISA adapter that has been removed from the system, the diagnostics fail because the system cannot detect the ISA adapter.

Configure Reboot Policy

Note: This service aid runs on CHRP system units only.

This service aid controls how the system tries to recover from a system crash.

Use this service aid to display and change the following settings for the Reboot Policy.

Note: Because of system capability, some of the following settings might not be displayed by this service aid.

- Maximum Number of Reboot Attempts

  Enter a number that is 0 or greater.

  Note: A value of 0 indicates 'do not attempt to reboot' to a crashed system.

  This number is the maximum number of consecutive attempts to reboot the system. The term *reboot*, in the context of this service aid, describes bringing system hardware back up from scratch; for example, from a system reset or power-on.

When the reboot process completes successfully, the reboot-attempts count is reset to 0, and a restart begins. The term *restart*, in the context of this service aid, is used to describe the operating system activation process. Restart always follows a successful reboot.

When a restart fails, and a restart policy is enabled, the system attempts to reboot for the maximum number of attempts.

- Use the O/S Defined Restart Policy (1=Yes, 0=No)

  When 'Use the O/S Defined Restart Policy' is set to Yes, the system attempts to reboot from a crash if the operating system has an enabled Defined Restart or Reboot Policy.

  When 'Use the O/S Defined Restart Policy' is set to No, or the operating system restart policy is undefined, then the restart policy is determined by the 'Supplemental Restart Policy'.
- Enable Supplemental Restart Policy (1=Yes, 0=No)

  The 'Supplemental Restart Policy', if enabled, is used when the O/S Defined Restart Policy is undefined, or is set to False.

  When surveillance detects operating system inactivity during restart, an enabled 'Supplemental Restart Policy' causes a system reset and the reboot process begins.
- Call-Out Before Restart (on/off)

  When enabled, Call-Out Before Restart allows the system to call out (on a serial port that is enabled for call-out) when an operating system restart is initiated. Such calls can be valuable if the number of these events becomes excessive, thus signalling bigger problems.
- Enable Unattended Start Mode (1=Yes, 0=No)

  When enabled, 'Unattended Start Mode' allows the system to recover from the loss of ac power.

  If the system was powered-on when the ac loss occurred, the system reboots when power is restored. If the system was powered-off when the ac loss occurred, the system remains off when power is restored.

You can access this service aid directly from the AIX command line, by typing:
`/usr/lpp/diagnostics/bin/uspchrp -b`

Configure Remote Maintenance Policy

Note: This service aid runs on CHRP system units only.

The Remote Maintenance Policy includes modem configurations and phone numbers to use for remote maintenance support.

Use this service aid to display and change the following settings for the Remote Maintenance Policy.

Note: Because of system capability, some of the following settings might not be displayed by this service aid.

- Configuration File for Modem on serial port 1 (S1)

  Configuration File for Modem on serial port 2 (S2).

  Enter the name of a modem configuration file to load on either S1 or S2. The modem configuration files are located in the directory **/usr/share/modems**. If a modem file is already loaded, it is indicated by `Modem file currently loaded`.
- Modem file currently loaded on S1

  Modem file currently loaded on S2

  This is the name of the file that is currently loaded on serial port 1 or serial port 2.

  Note: These settings are only shown when a modem file is loaded for a serial port.
- Call In Authorized on S1 (on/off)

  Call In Authorized on S2 (on/off)

Call In allows the Service Processor to receive a call from a remote terminal.

- Call Out Authorized on S1 (on/off)

  Call Out Authorized on S2 (on/off)

  Call Out allows the Service Processor to place calls for maintenance.
- S1 Line Speed

  S2 Line Speed

  A list of line speeds is available by using **List** on the screen.
- Service Center Phone Number

  This is the number of the service center computer. The service center usually includes a computer that takes calls from systems 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 the service provider for the correct telephone number to enter here.
- Customer Administration Center Phone Number

  This is the number of the System Administration Center computer (catcher) that receives problem calls from systems. Contact the system administrator for the correct telephone number to enter here.
- Digital Pager Phone Number In Event of Emergency

  This is the number for a pager carried by someone who responds to problem calls from your system.
- Customer Voice Phone Number

  This is the number for a telephone near the system, or answered by someone responsible for the system. This is the telephone number left on the pager for callback.
- Customer System Phone Number

  This is the number to which your system's modem is connected. The service or administration center representatives need this number to make direct contact with your system for problem investigation. This is also referred to as the `Call In phone number`.
- Customer Account Number

  This number is available for service providers to use for record-keeping and billing.
- Call Out Policy Numbers to call if failure

  This is set to either First or All. If the call-out policy is set to First, call out stops at the first successful call to one of the following numbers in the order listed:
  1. Service Center
  2. Customer Administration Center
  3. Pager

  If Call Out Policy is set to All, call-out attempts to call all of the following numbers in the order listed:
  1. Service Center
  2. Customer Administration Center
  3. Pager
- Remote Timeout, in seconds Remote Latency, in seconds

  These settings are functions of the service provider's catcher computer.
- Number of Retries While Busy

  This is the number of times the system should retry calls that resulted in busy signals.
- System Name (System Administrator Aid)

  This is the name given to the system and is used when reporting problem messages.

  Note: Knowing the system name aids the support team in quickly identifying the location, configuration, history, and so on of your system.

You can access this service aid directly from the AIX command line, by typing:
`/usr/lpp/diagnostics/bin/uspchrp -m`

Configure Ring Indicate Power-On Policy

Note: This service aid runs on CHRP system units only.

This service aid allows the user to power-on a system by telephone from a remote location. If the system is powered off, and Ring Indicate Power On is enabled, the system powers on at a predetermined number of rings. If the system is already on, no action is taken. In either case, the telephone call is not answered, and the caller receives no feedback that the system has powered on.

Use this service aid to display and change the following settings for the Ring Indicate Power-On Policy:

Because of system capability, some of the following settings might not be displayed by this service aid.
- Power On Via Ring Indicate (on/off)
- Number of Rings Before Power On

You can access this service aid directly from the AIX command line, by typing:
`/usr/lpp/diagnostics/bin/uspchrp -r`

Configure Ring Indicate Power On

Note: This service aid runs on RSPC system units only.

This service aid allows the user to display and change the NVRAM settings for the Ring Indicate Power On capability of the service processor.

The settings allows the user to:
- Enable or disable power-on from Ring Indicate
- Read or set the number of rings before power-on

Configure Scan Dump Policy

Note: This service aid runs on CHRP systems only and only under diagnostics 5.1.0.35 or later.

Configure Scan Dump Policy allows the user to set or view the scan dump policy (scan dump control and size) in NVRAM. Scan Dump data is a set of chip data that the service processor gathers after a system malfunction. It consists of chip scan rings, chip trace arrays, and Scan COM (SCOM) registers. This data is stored in the scan-log partition of the system's Nonvolatile Random Access Memory (NVRAM).

Use this service aid to display and change the following settings for the Scan Dump Policy at run time:
- Scan Dump Control (how often the dump is taken)
- Scan Dump Size (size and content of the dump)

The Scan Dump Control (SDC) settings are as follows:
- As Needed: This setting allows the platform firmware to determine whether a scan dump is performed. This is the default setting for the dump policy.
- Always: This setting overrides the firmware recommendations and always performs a dump after a system failure.

The Scan Dump Size (SDS) settings are as follows:
- As Requested - Dump content is determined by the platform firmware.

- Minimum - Dump content collected provides the minimum debug information, enabling the platform to reboot as quickly as possible.
- Optimum - Dump content collected provides a moderate amount of debug information.
- Complete - Dump data provides the most complete error coverage at the expense of reboot speed.

You can access this service aid directly from the AIX command line by typing:

```
/usr/lpp/diagnostics/bin/uspchrp -d
```

Configure Service Processor

Note: This service aid runs on RSPC system units only.

This service aid allows you to display and change the NVRAM settings for the service processor.

This service aid supports the following functions:
- Surveillance Setup
- Modem Configuration
- Call in or call out Setup
- Site specific call in or call out setup
- Reboot or restart policy setup

Surveillance Setup

Note: Surveillance is only supported for systems running in full machine partition.

This selection allows you to display and change the NVRAM settings for the surveillance capability of the service processor.

The settings allow you to:
- Enable or disable surveillance
- Set the surveillance time interval, in minutes
- Set the surveillance delay, in minutes

The current settings are read from NVRAM and displayed on the screen. Any changes made to the data shown are written to NVRAM.

Modem Configuration

Use this selection when setting the NVRAM for a modem attached to any of the Service Processor's serial ports. The user inputs the file name of a modem configuration file and the serial port number. The formatted modem configuration file is read, converted for NVRAM, and then loaded into NVRAM. Refer to the *Service Processor Installation and User's Guide* for more information.

Call In/Out Setup

This selection allows the user to display and change the NVRAM settings for the Call In/Call Out capability of the service processor.

The settings allow the user to:
- Enable or disable call in on either serial port
- Enable or disable call out on either serial port
- Set the line speed on either serial port

Site Specific Call In/Out Setup

This selection allows you to display and change the NVRAM settings that are site-specific for the call-in or call-out capability of the service processor.

The site-specific NVRAM settings allow you to set the following:

- Phone number for the service center
- Phone number for the customer administration center
- Phone number for a digital pager
- Phone number for the customer system to call in
- Phone number for the customer voice phone
- Customer account number
- Call-out policy
- Remote timeout value
- Remote latency value
- Number of retries while busy
- System name

The current settings are read from NVRAM and displayed on the screen. Any changes made to the data shown are written to NVRAM.

Reboot/Restart Policy Setup

This selection controls how the system tries to recover from a system crash.

Use this service aid to display and change the following settings for the Reboot Policy Setup.

- Maximum Number of Reboot Attempts

  Enter a number that is 0 or greater.

  Note: A value of 0 indicates ″do not attempt to reboot″ to a crashed system.

  This number is the maximum number of consecutive attempts allowed to reboot the system. The term *reboot*, when used in context of this service aid, describes the system hardware being brought back up from scratch. Examples would be a system reset or turning on the power.

  When the maximum number of reboot attempts is exceeded, the system calls out if that function has been enabled.

  When the reboot process completes successfully, the reboot-attempts count is reset to 0, and a restart begins. The term *restart*, when used in context of this service aid, describes the operating system activation process. Restart always follows a successful reboot.

  When a restart fails, and a restart policy is enabled, the system attempts to reboot for the maximum number of reboot attempts.
- Enable Restart Policy (1=Yes, 0=No)

  When the service processor detects operating system inactivity, an enabled ″Restart Policy″ causes a system reset, and the reboot process begins.
- Call-Out Before Restart (on/off)

  When enabled, ″Call-Out Before Restart″ allows the system to call out (on a serial port that is enabled for call-out) when an operating system restart is initiated. Such call-outs can be valuable if the number becomes excessive, thus signalling bigger problems.
- Enable Unattended Start Mode (1=Yes, 0=No)

  When enabled, ″Unattended Start Mode″ allows the system to recover from the loss of ac power.

  If the system was powered-on when the ac loss occurred, the system reboots when power is restored. If the system was powered-off when the ac loss occurred, the system remains off when power is restored.

Configure Surveillance Policy

Note: This service aid runs on CHRP system units only. This service aid is supported only for systems running in full machine partition.

This service aid monitors the system for hang conditions; that is, hardware or software failures that cause operating system inactivity. When enabled, and surveillance detects operating system inactivity, a call is placed to report the failure.

Use this service aid to display and change the following settings for the Surveillance Policy:

Note: Because of system capability, some of the following settings might not be displayed by this service aid:

- Surveillance (on/off)
- Surveillance Time Interval - This is the maximum time between heartbeats from the operating system.
- Surveillance Time Delay - This is the time to delay between when the operating system is in control and when to begin operating system surveillance.
- Changes are to Take Effect Immediately - Set this to Yes if the changes made to the settings in this menu are to take place immediately. Otherwise, the changes take effect beginning with the next system boot.

You can access this service aid directly from the AIX command line, by typing:
`/usr/lpp/diagnostics/bin/uspchrp -s`

Create Customized Configuration Diskette

This selection invokes the Diagnostic Package Utility Service Aid, which allows the user to create a standalone diagnostic package configuration diskette.

The Standalone Diagnostic Package Configuration Diskette allows the following to be changed from the console:

- Default refresh rate for a low function terminal (LFT)

  The refresh rate used by the standalone diagnostic package is 60 Hz. If the display's refresh rate is 77 Hz, set the refresh rate to 77.
- Different async terminal console

  You can create a console configuration file that allows a terminal attached to any RS232 or RS422 adapter to be selected as a console device. The default device is an RS232 TTY device attached to the first standard serial port (S1).

Delete Resource from Resource List

Use this task to delete resources from the resource list.

Note: Only resources that were previously detected by the diagnostics and have not been deleted from the Diagnostic Test List are listed. If no resources are available to be deleted, then none are listed.

Disk Maintenance

This service aid provides the following options for the fixed-disk maintenance:

- Disk to Disk Copy
- Display/Alter Sector

Disk to Disk Copy

Notes:

1. This service aid cannot be used to update to a different size drive. The service aid only supports copying from a SCSI drive to another SCSI drive of similar size.
2. Use the **migratepv** command when copying the contents to other disk drive types. This command also works when copying SCSI disk drives or when copying to a different size SCSI disk drive. Refer to *System Management Guide: Operating System and Devices* for a procedure on migrating the contents of a physical volume.

   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.

This selection allows you to recover data from an old drive when replacing it with a new drive. The service aid recovers all logical volume manager (LVM) software reassigned blocks. To prevent corrupted data from being copied to the new drive, the service aid stops if an unrecoverable read error is detected. To help prevent possible problems with the new drive, the service aid stops if the number of bad blocks being reassigned reaches a threshold.

To use this service aid, both the old and new disks must be installed in or attached to the system with unique SCSI addresses. This requires that the new disk drive SCSI address must be set to an address that is not currently in use and the drive be installed in an empty location. If there are no empty locations, then one of the other drives must be removed. When the copy is complete, only one drive can remain installed. Either remove the target drive to return to the original configuration, or perform the following procedure to complete the replacement of the old drive with the new drive:

1. Remove both drives.
2. Set the SCSI address of the new drive to the SCSI address of the old drive.
3. Install the new drive in the old drive's location.
4. Install any other drives (that were removed) into their original location.

To prevent problems that can occur when running this service aid from disk, it is suggested that this service aid be run, when possible, from the diagnostics that are loaded from removable media.

Display/Alter Sector

Note: Use caution when you use this service aid because inappropriate modification to some disk sectors can result in the total loss of all data on the disk.

This selection allows the user to display and alter information on a disk sector. Sectors are addressed by their decimal sector number. Data is displayed both in hex and in ASCII. To prevent corrupted data from being incorrectly corrected, the service aid does not display information that cannot be read correctly.

Display Configuration and Resource List

If a device is not included in the Test List or if you think a Diagnostic Package for a device is not loaded, check by using the Display Configuration and Resource List task. If the device you want to test has a plus (+) sign or a minus (-) sign preceding its name, the Diagnostic Package is loaded. If the device has an asterisk (*) preceding its name, the Diagnostic Package for the device is not loaded or is not available.

This service aid displays the item header only for all installed resources. Use this service aid when there is no need to see the vital product data (VPD). (No VPD is displayed.)

Display Firmware Device Node Information

Note: This service aid runs on CHRP system units only.

This task displays the firmware device node information. This service aid is intended to gather more information about individual or particular devices on the system. The format of the output data may differ depending on which level of the AIX operating system is installed.

Display Hardware Error Report

This service aid uses the **errpt** command to view the hardware error log.

The Display Error Summary and Display Error Detail selection provide the same type of report as the **errpt** command. The Display Error Analysis Summary and Display Error Analysis Detail selection provide additional analysis.

Display Hardware Vital Product Data

This service aid displays all installed resources, along with any VPD for those resources. Use this service aid when you want to look at the VPD for a specific resource.

Display Machine Check Error Log

Note: The Machine Check Error Log Service Aid is available only on Standalone Diagnostics.

When a machine check occurs, information is collected and logged in an NVRAM error log before the system unit shuts down. This information is logged in the AIX error log and cleared from NVRAM when the system is rebooted from the hard disk, LAN, or standalone media. When booting from Standalone Diagnostics, this service aid converts the logged information into a readable format that can be used to isolate the problem. When booting from the hard disk or LAN, the information can be viewed from the AIX error log using the Hardware Error Report Service Aid. In either case, the information is analyzed when the **sysplanar0** diagnostics are running in Problem Determination Mode.

Display Microcode Level

This task is used to display the microcode or firmware levels of currently installed resources. When the **sys0** resource is selected, the task displays the levels of both the system firmware and service processor firmware. **sys0** may not be available in all cases.

You can display the current level of the microcode on an adapter, the system, or a device by using the AIX **diag** command. See the following command syntax: `diag -c -d` *device* `-T "disp_mcode"`

Flag	Description
-c	No console mode.
-d	Used to specify a device.
-T	Use the disp_mcode option to display microcode.

The AIX **lsmcode** command serves as a command line interface to the Display Microcode Level task. For information on the **lsmcode** command, refer to the *AIX Commands Reference* manual.

Display MultiPath I/O (MPIO) Device Configuration

This service aid displays the status of MPIO devices and their connections to their parent devices.

This service aid is capable of sending SCSI commands on each available path regardless of the default MPIO path algorithm. Therefore, it is useful for testing the unused path for integrity.

Run this service aid if it is suspected that there is a problem with the path between MPIO devices and their parent devices.

This service aid is capable of:

- Listing MPIO devices
- Listing the parents of MPIO devices
- Displaying the status and location of specified MPIO devices
- Displaying the hierarchy of MPIO adapters and devices.

If there are no devices with multiple paths, this service aid will not be shown on the “Task Selection” menu.

Access this service aid directly from the AIX command line, by typing:

```
/usr/lpp/diagnostics/bin/umpio
```

Display or Change Bootlist

This service aid allows the bootlist to be displayed, altered, or erased.

The system attempts to perform an IPL from the first device in the list. If the device is not a valid IPL device or if the IPL fails, the system proceeds in turn to the other devices in the list to attempt an IPL.

Display or Change Diagnostic Run-Time Options

The Display or Change Diagnostic Run-Time Options task allows the diagnostic run-time options to be set.

Note: The run-time options are used only when selecting the Run Diagnostic task.

The run-time options are:

- Display Diagnostic Mode Selection Menus

  This option allows the user to turn on or off displaying the DIAGNOSTIC MODE SELECTION MENU (the default is on).
- Run Tests Multiple Times

  This option allows the user to turn on or off, or specify a loop count, for diagnostic loop mode (the default is off).

  Note: This option is only displayed when you run the Online Diagnostics in Service Mode.
- Include Advanced Diagnostics

  This option allows the user to turn on or off including the Advanced Diagnostics (the default is off).
- Include Error Log Analysis (not available in diagnostics 5.2.0 or later)

  This option allows the user to turn on or off including the Error Log Analysis (ELA) (the default is off).
- Number of Days Used to Search Error Log

  This option allows the user to select the number of days for which to search the AIX error log for errors when running the Error Log Analysis. The default is seven days, but it can be changed from one to sixty days.
- Display Progress Indicators

  This option allows the user to turn on or off the progress indicators when running the Diagnostic Applications. The progress indicators, in a box at the bottom of the screen, indicate that the test is being run (the default is on).

- Diagnostic Event Logging

  This option allows the user to turn on or off logging information to the Diagnostic Event Log (the default is on).
- Diagnostic Event Log File Size

  This option allows the user to select the maximum size of the Diagnostic Event Log. The default size for the Diagnostic Event Log is 100 KB. The size can be increased in 100 KB increments to a maximum of 1 MB.

Use the **diaggetrto** command to display one or more diagnostic run-time options. Use the following AIX command line syntax:

```
/usr/lpp/diagnostics/bin/diaggetrto [-a] [-d] [-l] [-m] [-n] [-p] [-s]
```

Use the **diagsetrto** command to change one or more diagnostic run-time options. Use the following AIX command line syntax:

```
/usr/lpp/diagnostics/bin/diagsetrto [-a on|off] [-d on|off] [-l size]
[-m on|off] [-n days] [-p on|off]
```

Flag descriptions for the **diaggetrto** and **diagsetrto** commands are as follows:

Flag	Description
-a	Displays or changes the value of the Include Advanced Diagnostics option.
-d	Displays or changes the value of the Diagnostic Event Logging option.
-l	Displays or changes the value of the Diagnostic Event Log File Size. Allowable size are between 100K and 1000K in increments of 100K. The size may never be decreased.
-m	Displays or changes the value of the Display Diagnostic Mode Selection Menu option.
-n	Displays or changes the value of the Number of Days Used To Search the Error Log option. Allowable values are between 1 and 60 days. 7 days is the default.
-p	Displays or changes the value of the Display Progress Indicators option.
-s	Displays all of the diagnostic run-time options.

Display Previous Diagnostic Results

Note: This service aid is not available when you load the diagnostics from a source other than a hard disk drive or a network.

This service aid allows a service representative to display results from a previous diagnostic session. When the Display Previous Diagnostic Results option is selected, the user can view up to 25 no trouble found (NTF) and service request number (SRN) results.

This service aid displays Diagnostic Event Log information. You can display the Diagnostic Event Log in a short version or a long version. The Diagnostic Event Log contains information about events logged by a diagnostic session.

This service aid displays the information in reverse chronological order.

This information is not from the AIX operating system error log. This information is stored in the **/var/adm/ras** directory.

You can run the command from the AIX command line by typing: `/usr/lpp/diagnostics/bin/diagrpt [[-o] | [-s mmddyy] | [-a] | [-r]]`

Flag	Description

-o	Displays the last diagnostic results file stored in the **/etc/lpp/diagnostics/data** directory
-s *mmddyy*	Displays all diagnostic result files logged since the date specified
-a	Displays the long version of the Diagnostic Event Log
-r	Displays the short version of the Diagnostic Event Log

Display Resource Attributes

This task displays the Customized Device Attributes associated with a selected resource. This task is similar to running the **lsattr -E -l** *resource* command.

Display Service Hints

This service aid reads and displays the information in the CEREADME file from the diagnostics media. This file contains information that is not contained in the publications for this version of the diagnostics. The file also contains information about using this particular version of diagnostics.

Display Software Product Data

This task uses SMIT to display information about the installed software and provides the following functions:

- List Installed Software
- List Applied but Not Committed Software Updates
- Show Software Installation History
- Show Fix (APAR) Installation Status
- List Fileset Requisites
- List Fileset Dependents
- List Files Included in a Fileset
- List File Owner by Fileset

Display System Environmental Sensors

Note: This service aid runs on CHRP system units only.

This service aid displays the environmental sensor information for the system. The information displayed is the sensor name, physical location code, literal value of the sensor status, and the literal value of the sensor reading.

The sensor status can be any one of the following:

- **Normal** - The sensor reading is within the normal operating range.
- **Critical High** - The sensor reading indicates a serious problem with the device. Run diagnostics on sysplanar0 to determine what repair action is needed.
- **Critical Low** - The sensor reading indicates a serious problem with the device. Run diagnostics on sysplanar0 to determine what repair action is needed.
- **Warning High** - The sensor reading indicates a problem with the device. This could become a critical problem if action is not taken. Run diagnostics on sysplanar0 to determine what repair action is needed.
- **Warning Low** - The sensor reading indicates a problem with the device. This could become a critical problem if action is not taken. Run diagnostics on sysplanar0 to determine what repair action is needed.
- **Hardware Error** - The sensor could not be read because of a hardware error. Run diagnostics on sysplanar0 in problem-determination mode to determine what repair action is needed.
- **Hardware Busy** - The system has repeatedly returned a busy indication, and a reading is not available. Try the service aid again. If the problem continues, run diagnostics on sysplanar0 in problem-determination mode to determine what repair action is needed.

This service aid can also be run as a command. You can use the command to list the sensors and their values in a text format, list the sensors and their values in numerical format, or a specific sensor can be queried to return either the sensor status or sensor value.

Run the command by entering one of the following: `/usr/lpp/diagnostics/bin/uesensor -l | -a /usr/lpp/diagnostics/bin/uesensor -t` *token* `-i` *index* `[-v]`

Flag	Description
-l	List the sensors and their values in a text format.
-a	List the sensors and their values in a numerical format. For each sensor, the numerical values are displayed as: *token index status measured value location code*
-t *token*	Specifies the sensor token to query.
-i *index*	Specifies the sensor index to query.
-v	Indicates to return the sensor measured value. The sensor status is returned by default.

Examples

The following are examples from this command:

1. Display a list of the environmental sensors: `/usr/lpp/diagnostics/bin/uesensor -l`

   ```
   Sensor = Fan Speed
   Status = Normal
   Value = 2436 RPM
   Location Code = F1
   Sensor = Power Supply
   Status = Normal
   Value = Present and operational
   Location Code = V1
   Sensor = Power Supply
   Status = Critical low
   Value = Present and not operational
   Location Code = V2
   ```

2. Display a list of the environmental sensors in a numerical list: `/usr/lpp/diagnostics/bin/uesensor -a`

   ```
   3 0 11 87 P1
   9001 0 11 2345 F1
   9004 0 11 2 V1
   9004 1 9 2 V2
   ```

3. Return the status of sensor 9004, index 1: `/usr/lpp/diagnostics/bin/uesensor -t 9004 -i 1`

   ```
   9
   ```

4. Return the value of sensor 9004, index 1: `/usr/lpp/diagnostics/bin/uesensor -t 9004 -i 1 -v`

   ```
   2
   ```

Display Test Patterns

This service aid provides a means of adjusting system display units by providing test patterns that can be displayed. The user works through a series of menus to select the display type and test pattern. After the selections are made, the test pattern displays.

Display USB Devices

The following are the main functions of this service aid:

- Display a list of USB controllers on an adapter.
- Display a list of USB devices that are connected to the selected controller.

To run the USB devices service aid, go to the diagnostics ″TASKS SELECTION″ menu, select ″*Display USB Devices*″. From the controller list that displayed on the screen, select one of the items that begins with ″OHCDX″, where ″X″ is a number. A list of devices attached to the controller displays.

Download Microcode

This service aid provides a way to copy microcode to an adapter or device. The service aid presents a list of adapters and devices that use microcode. After the adapter or device is selected, the service aid provides menus to guide you in checking the current level and downloading the needed microcode.

This task can be run directly from the AIX command line. See the following sections for instructions on downloading to a particular type adapter or device.

Download Microcode to PCI SCSI RAID Adapter

See the following command syntax for a PCI SCSI RAID Adapter:

```
diag -c -d RAIDadapterName -T "download [-B] [-D] [-P]"
```

Flag	Description
-B	Download boot block microcode (default to functional microcode)
-D	Microcode is on diskette (default to **/etc/microcode** directory)
-P	Download the previous level of microcode (default to latest level)

Download Microcode to a PCI-X Dual Channel Adapter

Microcode installation occurs while the adapter and attached drives are available for use. Before installation of the microcode, ensure that there is a current backup of the system available. It is recommended that the installation be scheduled during a non-peak production time period.

Notes:

1. If the source is **/etc/microcode**, the image must be stored in the **/etc/microcode** directory on the system. If the system is booted from a NIM server, the image must be stored in the **usr/lib/microcode** directory of the SPOT the client is booted from.
2. If the source is diskette, the diskette must be in a backup format and the image stored in the **/etc/microcode** directory.

See the following command syntax for a PCI-X Adapter:

```
diag -c -d device_name -T "download [-s {/etc/microcode|diskette}]
[-l {latest|previous}] [-f]"
```

Flag	Description
-c	No console mode. Run without user interaction.
-d	Device name is the name of the adapter.
-f	Force the installation even if the current level of microcode is not on the source.
-l	Level of microcode to install. The default is the latest.
-s	Source of the new microcode image. The default is **/etc/microcode**.
-T	Use the download option to download microcode.

Download Microcode to Disk Drive Attached to a PCI SCSI RAID Adapter

See the following command syntax for a disk drive attached to a PCI SCSI RAID Adapter:
`diag -c -d` *RAIDadapterName* `-T "download {-l` *chID* `| -A} [-D] [-P]"`

Flag	Description
-A	All disk drives
-D	Microcode is on diskette (default to **/etc/microcode** directory)
-l	RAID disk drive-physical disk channel/ID (for example, 27)
-P	Download the previous level of microcode (default to latest level)

Download Microcode to a Fiber Channel Adapter

Microcode installation occurs while the adapter and attached drives are available for use. Before installation of the microcode, ensure that a current backup of the system is available. It is recommended that the installation be scheduled during a non-peak production time period.

Notes:

1. If the source is **/etc/microcode**, the image must be stored in the **/etc/microcode** directory on the system. If the system is booted from a NIM server, the image must be stored in the **usr/lib/microcode** directory of the SPOT the client is booted from.
2. If the source is diskette, the diskette must be in backup format and the image stored in the **/etc/microcode** directory.

See the following command syntax for a Fiber Channel Adapter. `diag -c -d` *device_name* `-T "download [-s {/etc/microcode|diskette}] [-l {latest|previous}] [-f]"`

Flag	Description
-c	No console mode. Run without user interaction.
-d	Device name is the name of the adapter.
-T	Use the download option to download microcode.
-s	Source of the new microcode image. Default is **/etc/microcode**.
-l	Level of microcode to install. The default is the latest.
-f	Force the installation even if the current level of microcode is not on the source.

Download Microcode to DVD-RAM Attached to a PCI SCSI Adapter

See the following command syntax for a DVD-RAM attached to a PCI SCSI Adapter:

`diag [-c] -d cdX -T "`*download* `[-s {/etc/microcode|diskette}] [-l {latest|previous}] [-f]"`

Flag	Description
-c	No console mode. Run without user interaction
cdX	Device selected, for example, cd0.
-s	Source of the new microcode. The default is **/etc/microcode**.
-l	Level of microcode image to be installed. Latest in default
-f	Install the microcode on the device even if the current level is unavailable on the source.

Download Microcode to Disk Attached to PCI SCSI Adapter

See following command syntax for a disk drive attached to a PCI SCSI adapter:

`diag [-c] -d` *hdiskX* `-T "`*download* `[-s {/etc/microcode|diskette}] [-l {latest|previous}] [-f]"`

Flag	Description
-c	No console mode. Run without user interaction
-d *hdiskX*	Selected device, for example, hdisk0.
-T *download*	Download microcode task.
-s	Source of the new microcode. The default is **/etc/microcode**.

-l Level of microcode image to be installed. Latest in default
-f Install the microcode on the device even if the current level is unavailable on the source.

Download Microcode to Other Devices

See the following command syntax: `diag -c -d device_name -T "download [-s diskette] [-l previous] [-F]"`

Flag	Description
-F	Force the download microcode even if the current level is unavailable on the source.
-l	Microcode level. Latest is default.
-s	Source of the new microcode. The default is **/etc/microcode**. Default source device is disk.

Fault Indicators

Note: Prior to Diagnostics version 5.1.0.35, this task was also known as the System Fault Indicator task.

This task is used to display or reset the Fault Indicators on the systems that support this function. This task may also be used to set the Fault Indicators for testing purposes, but the Indicators are not set back to normal when you exit this task.

The Fault Indicators are used to identify a fault with the system. These indicators may be set automatically by hardware, firmware, or diagnostics when a fault is detected in the system.

The Fault Indicators are turned off when a Log Repair Action is performed. After a serviceable event is complete, do a System Verification to verify the fix. Also do a Log Repair Action if the test on the resource was good, and that resource had an entry in the error log. If the serviceable event was not a result of an error log entry, use the Log Repair Action Task to turn off the system fault indicator.

For additional information concerning the use of these indicators, refer to the system guide.

Note: The AIX command does not allow you to set the fault indicators to the Fault state.

Use the following command syntax:

`/usr/lpp/diagnostics/bin/usysfault [-s normal] [-l location code]`

Flag	Description
-s *normal*	Sets the Fault Indicator to the normal state.
-l *location code*	Identifies the resource by physical location code.

When the command is used without the **-s** flag, the current state of the indicator is displayed as normal or attention.

When teh command is used without the **-l** flag, the Primary Enclosure resource is used.

Use the **-l** flag only in systems that have more than one fault indicator.

Note: See also the “Identify and System Attention Indicators” on page 180. Some systems that do not support Fault Indicators have a similar System Attention Indicator.

Fibre Channel RAID Service Aids

The Fibre Channel RAID service aids contain the following functions:

Certify LUN
This selection reads and checks each block of data in the logical unit number (LUN). If excessive errors are encountered, the user is notified.

You can run this task from the AIX command line. Use the following fast-path command:

```
diag -T "certify"
```

Certify Spare Physical Disk
This selection allows the user to certify (check integrity of the data) drives that are designated as spares.

You can run this task from the AIX command line. Use the following fast-path command:

```
diag -T "certify"
```

Format Physical Disk
This selection is used to format a selected disk drive.

You can run this task from the AIX command line. Use the following fast-path command:

```
diag -T "format"
```

Array Controller Microcode Download
This selection allows the microcode on the Fibre Channel RAID controller to be updated when required.

You can run this task from the AIX command line. Use the following fast-path command:

```
diag -T "download"
```

Physical Disk Microcode Download
This selection is used to update the microcode on any of the disk drives in the array.

You can run this task from the AIX command line. Use the following fast-path command:

```
diag -T "download"
```

Update EEPROM
This selection is used to update the contents of the electronically erasable programmable read-only memory (EEPROM) on a selected controller.

Replace Controller
Use this selection when it is necessary to replace a controller in the array.

Flash SK-NET FDDI Firmware

This task allows the Flash firmware on the SysKonnect SK-NET FDDI adapter to be updated.

Format Media

This task allows the selection of diskettes, hardfiles, or optical media to be formatted. Each selection is described below.

Hardfile Attached to SCSI Adapter (non-RAID)

- Hardfile Format

  Writes all of the disk. The pattern written on the disk is device-dependent; for example some drives may write all 0s, while some may write the hexadecimal number 5F. No bad block reassignment occurs
- Hardfile Format and Certify

  Performs the same function as Hardfile Format. After the format is completed, Certify is run. Certify then reassigns all bad blocks encountered.
- Hardfile Erase Disk

This option can be used to overwrite (remove) all data currently stored in user-accessible blocks of the disk. The **Erase Disk** option writes one or more patterns to the disk. An additional option allows data in a selectable block to be read and displayed on the system console.

To use the **Erase Disk** option, specify the number (0-3) of patterns to be written. The patterns are written serially; that is, the first pattern is written to all blocks. The next pattern is written to all blocks, overlaying the previous pattern. A random pattern is written by selecting the **Write Random Pattern?** option.

Note: The Erase Disk service aid has not been certified as meeting the Department of Defense or any other organization's security guidelines.

To overwrite the data on the drive, use the following steps :

1. Select **Erase Disk**.
2. Do a format without certify.
3. Select **Erase Disk** to run it a second time.

For a newly installed drive, you can ensure that all blocks on the drive are overwritten with your pattern by using the following procedure:

1. Format the drive.
2. Check the defect MAP by running the **Erase Disk** option.

   Note: If you use the **Format and Certify** option, there may be some blocks which get placed into the grown defect MAP.
3. If there are bad blocks in the defect MAP, record the information presented and ensure that this information is kept with the drive. This data is used later when the drive is to be overwritten.
4. Use the drive as you would normally.
5. When the drive is no longer needed and is to be erased, run the same version of the **Erase Disk** option which was used in step 2.

   Note: Using the same version of the service aid is only critical if any bad blocks were found in step 3.
6. Compare the bad blocks which were recorded for the drive in step 3 with those that now appear in the grown defect MAP.

   Note: If there are differences between the saved data and the newly obtained data, all sectors on this drive cannot be overwritten. The new bad blocks are not overwritten.
7. If the bad block list is the same, continue running the service aid to overwrite the disk with the chosen pattern(s).

This task can be run directly from the AIX command line. See the command syntax: `diag -c -d` *deviceName* `-T "format [-s* fmtcert | erase -a {read | write}] [-F]"`

Flag	Description
fmtcert	Formats and certifies the disk.
*	Available in no-console mode only.
-F	Force the disk erasure even if all blocks cannot be erased due to errors accessing grown defect map.

Note: The Erase Disk option in command line mode uses default values. To selectively read or write, use the **diag** command in console mode.

Hardfile Attached to PCI SCSI RAID Adapter

This function formats the physical disks attached to a PCI SCSI RAID adapter. This task can be run directly from the AIX command line. See the following command syntax: `diag -c -d` *RAIDadapterName* `-T "format {-l` *chId* `| -A }"`

Flag	Description
-l	Physical disk channel/ID (An example of a physical disk channel/ID is 27, where the channel is 2 and the ID is 7.)
-A	All disks

Optical Media

Use the following functions to check and verify optical media:

- Optical Media Initialize

  Formats the media without certifying. This function does not reassign the defective blocks or erase the data on the media. This option provides a quick way of formatting the media and cleaning the disk.

  Note: It takes approximately one minute to format the media.
- Optical Media Format and Certify

  Formats and certifies the media. This function reassigns the defective blocks and erases all data on the media.

This task can be run directly from the AIX command line. See the following command syntax: `diag -c -d` *deviceName* `-T "format [-s {initialize | fmtcert} ]"`

Option	Description
initialize	Formats media without certifying
fmtcert	Formats and certifies the media

Diskette Format

This selection formats a diskette by writing patterns to it.

Gather System Information

This service aid uses the AIX snap command to collect configuration information on networks, file systems, security, the kernel, the ODM, and other system components. You can also collect SSA adapter and disk drive configuration data, or AIX trace information for software debugging.

The output of the SNAP service aid can be used by field service personnel, or it can be put on removable media and transferred to remote locations for more extensive analysis.

To use the SNAP task, select **Gather System Information** from the task list. You can select which components you want to collect information for, and where to store the data (hard disk or removable media).

Generic Microcode Download

The Generic Microcode Download service aid provides a means of executing a genucode script from a diskette or tape. The purpose of this generic script is to load microcode to a supported resource.

The genucode program should be downloaded onto diskette or tape in **tar** format while the microcode image itself goes onto another one in **restore** format. Running the Generic Microcode Download task will search for the genucode script on diskette or tape and execute it. It will ask for a Genucode media to be

inserted into the drive. The service aid moves the genucode script file to the **/tmp** directory and runs the program that downloads the microcode to the adapter or device.

This service aid is supported in both concurrent and standalone modes from disk, LAN, or loadable media.

Hot Plug Task

The Hot Plug Task provides software function for those devices that support hot-plug or hot-swap capability. This includes PCI adapters, SCSI devices, and some RAID devices. This task was previously known as ″SCSI Device Identification and Removal″ or ″Identify and Remove Resource.″

The Hot Plug Task has a restriction when running in Standalone or Online Service mode; new devices cannot be added to the system unless there is already a device with the same FRU part number installed in the system. This restriction is in place because the device software package for the new device cannot be installed in Standalone or Online Service mode.

Depending on the environment and the software packages installed, selecting this task displays the following subtasks:
- PCI Hot Plug Manager
- SCSI Hot Swap Manager
- RAID Hot Plug Devices

To run the Hot Plug Task directly from the command line, type the following: `diag -T"identifyRemove"`

If you are running the diagnostics in Online Concurrent mode, run the Missing Options Resolution Procedure immediately after removing any device.

If the Missing Options Resolution Procedure runs with no menus or prompts, device configuration is complete. Otherwise, work through the missing options menu to complete device configuration in diagnostics prior to version 5.2.0. In diagnostics version 5.2.0 and later, select the device that has an uppercase `M` in front of it in the resource list so that missing options processing can be done on that resource.

PCI Hot Plug Manager

The PCI Hot Plug Manager task is a SMIT menu that allows you to identify, add, remove, or replace PCI adapters that are hot-pluggable. The following functions are available under this task:
- List PCI Hot Plug Slots
- Add a PCI Hot Plug Adapter
- Replace/Remove a PCI Hot Plug Adapter
- Identify a PCI Hot Plug Slot
- Unconfigure Devices
- Configure Devices
- Install/Configure Devices Added After IPL

The **List PCI Hot Plug Slots** function lists all PCI hot-plug slots. Empty slots and populated slots are listed. Populated slot information includes the connected logical device. The slot name consists of the physical location code and the description of the physical characteristics for the slot.

The **Add a PCI Hot Plug Adapter** function is used to prepare a slot for the addition of a new adapter. The function lists all the empty slots that support hot plug. When a slot is selected, the visual indicator for the slot blinks at the Identify rate. After the slot location is confirmed, the visual indicator for the specified PCI slot is set to the Action state. This means the power for the PCI slot is off and the new adapter can be plugged in.

The **Replace/Remove a PCI Hot Plug Adapter** function is used to prepare a slot for adapter exchange. The function lists all the PCI slots that support hot plug and are occupied. The list includes the slot's physical location code and the device name of the resource installed in the slot. The adapter must be in the Defined state before it can be prepared for hot-plug removal. When a slot is selected, the visual indicator for the slot is set to the Identify state. After the slot location is confirmed, the visual indicator for the specified PCI slot is set to the Action state. This means the power for the PCI slot is off, and the adapter can be removed or replaced.

The **Identify a PCI Hot Plug Slot** function is used to help identify the location of a PCI hot-plug adapter. The function lists all the PCI slots that are occupied or empty and support hot plug. When a slot is selected for identification, the visual indicator for the slot is set to the Identify state.

The **Unconfigure Devices** function attempts to put the selected device, in the PCI hot-plug slot, into the Defined state. This action must be done before any attempted hot-plug function. If the unconfigure function fails, it is possible that the device is still in use by another application. In this case, the customer or system administrator must be notified to quiesce the device.

The **Configure Devices** function allows a newly added adapter to be configured into the system for use. This function should also be done when a new adapter is added to the system.

The **Install/Configure Devices Added After IPL** function attempts to install the necessary software packages for any newly added devices. The software installation media or packages are required for this function.

Standalone Diagnostics has restrictions on using the PCI Hot-Plug Manager. For example:

- Adapters that are replaced must be exactly the same FRU part number as the adapter being replaced.
- New adapters cannot be added unless a device of the same FRU part number already exists in the system, because the configuration information for the new adapter is not known after the Standalone Diagnostics are booted.
- The following functions are not available from the Standalone Diagnostics and will not display in the list:
  - Add a PCI Hot Plug Adapter
  - Configure Devices
  - Install/Configure Devices Added After IPL

You can run this task directly from the command line by typing the following command: `diag -d` *device* `-T"identifyRemove"`

However, note that some devices support both the PCI Hot-Plug task and the RAID Hot-Plug Devices task. If this is the case for the *device* specified, then the Hot Plug Task displays instead of the PCI Hot Plug Manager menu.

More detailed information concerning PCI Hot-Plug Manager can be found in the AIX Operating System, System Management Guide.

SCSI Hot Swap Manager

This task was known as ″SCSI Device Identification and Removal″ or ″Identify and Remove Resources″ in previous releases. This task allows the user to identify, add, remove, and replace a SCSI device in a system unit that uses a SCSI Enclosure Services (SES) device. The following functions are available:

- List the SES Devices
- Identify a Device Attached to an SES Device
- Attach a Device to an SES Device
- Replace/Remove a Device Attached to an SES Device
- Configure Added/Replaced Devices

The **List the SES Devices** function lists all the SCSI hot-swap slots and their contents. Status information about each slot is also available. The status information available includes the slot number, device name, whether the slot is populated and configured, and location.

The **Identify a Device Attached to an SES Device** function is used to help identify the location of a device attached to an SES device. This function lists all the slots that support hot swap that are occupied or empty. When a slot is selected for identification, the visual indicator for the slot is set to the Identify state.

The **Attach a Device to an SES Device** function lists all empty hot-swap slots that are available for the insertion of a new device. After a slot is selected, the power is removed. If available, the visual indicator for the selected slot is set to the Remove state. After the device is added, the visual indicator for the selected slot is set to the Normal state, and power is restored.

The **Replace/Remove a Device Attached to an SES Device** function lists all populated hot-swap slots that are available for removal or replacement of the devices. After a slot is selected, the device populating that slot is Unconfigured; then the power is removed from that slot. If the Unconfigure operation fails, it is possible that the device is in use by another application. In this case, the customer or system administrator must be notified to quiesce the device. If the Unconfigure operation is successful, the visual indicator for the selected slot is set to the Remove state. After the device is removed or replaced, the visual indicator, if available for the selected slot, is set to the Normal state, and power is restored.

Note: Before you remove the device, be sure that no other host is using it.

The **Configure Added/Replaced Devices** function runs the configuration manager on the parent adapters that had child devices added or removed. This function ensures that the devices in the configuration database are configured correctly.

Standalone Diagnostics has restrictions on using the SCSI Hot Plug Manager. For example:
- Devices being used as replacement devices must be exactly the same type of device as the device being replaced.
- New devices may not be added unless a device of the same FRU part number already exists in the system, because the configuration information for the new device is not known after the Standalone Diagnostics are booted.

You can run this task directly from the command line. See the following command syntax:

```
diag -d device-T"identifyRemove"
OR
diag [-c] -d device -T"identifyRemove -a [identify|remove]"
```

Flag	Description
-a	Specifies the option under the task.
-c	Run the task without displaying menus. Only command line prompts are used. This flag is only applicable when running an option such as identify or remove.
-d	Indicates the SCSI device.
-T	Specifies the task to run.

RAID Hot Plug Devices

This task allows the user to identify, or remove a RAID device in a system unit that uses a SCSI Enclosure Services (SES) device. The following subtasks are available:
- **Normal**
- **Identify**
- **Remove**

The **Normal** subtask is used to return a RAID hot plug device to its normal state. This subtask is used after a device has been identified or replaced. This subtask lists all channel/IDs of the RAID and the status of the devices that are connected. A device in its normal state has power and the check light is off.

The **Identify** subtask is used to identify the physical location of a device or an empty position in the RAID enclosure. This subtask lists all channel/IDs of the RAID and the status of the devices that are connected to the RAID enclosure. If a device is attached to the selected channel/ID, the check light on the device will begin to flash. If the channel/ID does not have a device attached, the light associated with the empty position on the enclosure will begin to flash.

The **Remove** subtask is used to put the RAID hot plug device in a state where it can be removed or replaced. This subtask lists all channel/IDs of the RAID adapter that have devices that can be removed. Only devices with a status of `Failed`, `Spare`, `Warning`, or `Non Existent` can be removed. A device's status can be changed with the AIX **smitty pdam** command. After a device is selected for removal, the check light on the device will begin to flash, indicating that you may physically remove that device.

Standalone Diagnostics has restrictions on using the RAID Hot Plug Manager:

- Devices being used as replacement devices must be exactly the same type of device as the device being replaced.
- New devices may not be added unless a device of the same FRU part number already exists in the system because the configuration information for the new device is not known after the Standalone Diagnostics are booted.

You can run this task directly from the command line. See the following command syntax:

```
diag -c -d <device name> -T "identifyRemove -l <ChId> -s {identify|remove|normal}
```

Flags	Description
-c	Run the task without displaying menus. Only command line prompts are used.
-d	Raid adapter device name (for example, `scraid0`).
-s	Subtask to execute such as identify, remove, or normal.
-l	*CHId* is the channel number of the RAID adapter and SCSI ID number of the position in the enclosure concatenated together (for example, 27 for channel 2, device 7).
-T	Task to run.

Identify Indicators

See the "Identify and System Attention Indicators" on page 180 for a description of the Identify Indicators task.

Identify and Remove Resource Task

This is the original task that supported hot-plug SCSI devices, which has since been replaced (after AIX 4.3.3) with the "Hot Plug Task" on page 176.

This task is only supported on hot-pluggable SCSI devices, although the resource list may show non-hot-plug devices.

The service aid lists any SCSI enclosure services (SES) device installed in the system, and the slots within the SES. If the slot is populated, the service aid will show the name of the device in the slot, as well as its location code.

To do an operation on a slot, select the slot and press Enter. A menu displays with the following options:

- **Set this Slot for Removal**. This selection sets the removal indication and prepares the device for removal from the SES.
- **Set this Slot for Identify**. This selection sets the identify indication for the slot. This selection is used to physically identify a slot within the SES.
- **Set this Slot to Normal**. This selection resets the identify and removal indications. This is the normal operating state of the slot, when no identify, removal, nor insert operations are being performed.
- **Set this Slot for Insert**. This selection sets the slot for insertion of a device into the SES, and sets the indicator associated with the slot to the state indicating that a device may be inserted into that slot.

Identify and System Attention Indicators

Note: Prior to Diagnostics version 5.1.0.35, this task may also have been known as the System Identify Indicator or Identify Indicators task.

This task is used to display or set the Identify Indicators and the single system attention indicator on the systems that support this function.

Some systems may support the Identify Indicators or the Attention Indicators. The Identify Indicator is used to help physically identify the system in a large equipment room. The Attention Indicator is used to help physically identify a system with a fault in a large equipment room.

When a fault has been detected on a system that supports the Attention Indicator, the Indicator is set to an Attention condition. After the failing system has been identified and the problem fixed, the Attention Indicator changes back to normal. This should be done by the Log Repair Action Task.

Note: It is important to run the Log Repair Action function. This action keeps the Fault Indicator from going back to the Fault state due to a previous error in the error log that has already been serviced.

For additional information concerning the use of this indicator, refer to the service guide.

This task can also be run directly from the command line by typing

`/usr/lpp/diagnostics/bin/usysident [-s {normal | identify}] [-l location code]`

Flag **Description**

-s {normal | identify}
Sets the state of the System Identify Indicator to either normal or identify.

-l *location code*
Identifies the resource by physical location code.

When this command is used without the **-l** flag, the Primary Enclosure resource is used.

Use the **-l** flag only in systems that have more than one Identify and System attention indicator.

When this command is used without **-s** flag, the current state of the identify indicator is displayed.

For more information on the tasks, see Chapter 28, “Introducing Tasks and Service Aids”, on page 151.

Local Area Network Analyzer

This selection is used to exercise the LAN communications adapters (Token Ring, Ethernet, and (FDDI) Fiber Distributed Data Interface). The following services are available:

- Connectivity testing between two network stations. Data is transferred between the two stations, requiring the user to provide the Internet addresses of both stations.

- Monitoring ring (Token Ring only). The ring is monitored for a specified period of time. Soft and hard errors are analyzed.

Log Repair Action

The Log Repair Action task logs a repair action in the AIX Error Log. A Repair Action log indicates that a FRU has been replaced, and error log analysis should not be done for any errors logged before the repair action. The Log Repair Action task lists all resources. Replaced resources can be selected from the list, and when **commit** (F7 key) is selected, a repair action is logged for each selected resource. For more information see, “Log Repair Action” on page 131.

Periodic Diagnostics

This selection provides a tool for configuring periodic diagnostics and automatic error log analysis. You can select a hardware resource to be tested once a day, at a user-specified time.

Hardware errors logged against a resource can also be monitored by enabling automatic error log analysis. This allows error log analysis to be performed every time a hardware error is put into the error log. If a problem is detected, a message is posted to the system console and either sent to the Service Focal Point when there is an attached HMC, or a mail message to the users belonging to the system group containing information about the failure, such as the service request number.

The service aid provides the following functions:

- Add or delete a resource to the periodic test list
- Modify the time to test a resource
- Display the periodic test list
- Modify the error notification mailing list
- Disable or enable automatic error log analysis

PCI RAID Physical Disk Identify

For a description of the PCI RAID Physical Disk Identify task, see “SCSI RAID Physical Disk Status and Vital Product Data” on page 186.

PCI SCSI Disk Array Manager

This service aid calls the **smitty pdam** fastpath, and is used to manage a RAID array connected to a SCSI RAID adapter. It may also be run from standalone diagnostics, which is available on systems or partitions with operating systems other than AIX installed on them (these environments do not allow you to run the **smitty pdam** command).

Some of the tasks performed using this service aid include:

- Check device status for the disk array on your system.
- Display information of physical drives and disk arrays.
- Run recovery options on the RAID (which needs to be done at the end of a service call in which you replaced the RAID adapter cache card or changed the RAID configuration)

Other RAID functions are available using this service aid, they should only be used by the system administrator who is familiar with the RAID configuration. These functions are normally done when booting AIX, using **smitty pdam** command line. Without knowledge of how the RAID was set up, these functions can cause loss of data stored on the RAID.

Process Supplemental Media

Process Supplemental Media contains all the necessary diagnostic programs and files required to test a particular resource. The supplemental media is normally released and shipped with the resource as indicated on the diskette label. Diagnostic Supplemental Media must be used when the device support has not been incorporated into the latest diagnostic CD-ROM.

This task processes the Diagnostic Supplemental Media. Insert the supplemental media when you are prompted; then press Enter. After processing has completed, go to the Resource Selection list to find the resource to test.

Notes:

1. This task is supported in Standalone Diagnostics only.
2. Process and test one resource at a time. Run diagnostics after each supplemental media is processed. (for example; If you need to process two supplemental media, run diagnostics twice, once after each supplement media is processed.)

Run Diagnostics

The Run Diagnostics task invokes the Resource Selection List menu. When the commit key is pressed, diagnostics are run on all selected resources.

The procedures for running the diagnostics depend on the state of the diagnostics run-time options. See “Display or Change Diagnostic Run-Time Options” on page 166.

Run Error Log Analysis

The Run Error Log Analysis task invokes the Resource Selection List menu. When the commit key is pressed, Error Log Analysis is run on all selected resources.

Run Exercisers

The Run Exercisers task provides a tool to troubleshoot intermittent system problems in AIX 4.3.2 or later, to test hardware, and to verify replacement parts. When AIX error logging is enabled, the Run Error Log Analysis task can be used to analyze errors after the exerciser completes. Hardware errors are logged in the AIX Error Log. Miscompares and recoverable errors are not reported. However, they may be logged in the AIX Error Log when logging thresholds are exceeded.

The diagnostic supervisor typically sets up temporary work files in the **/tmp** directory to log messages and device statistics. These files are deleted before an exerciser session begins. In addition to individual exerciser requirements, the following requirements pertain to all exercisers:

- Only supported on CHRP platforms
- Only supported in concurrent or service modes
- Not supported from standalone diagnostics
- System performance will be degraded while running the exerciser, so it is recommended that customer applications be shut down before it is run.
- At least 1 MB of free storage in the **/tmp** directory is available

From the TASK SELECTION LIST menu select **Run Exercisers**. The RESOURCES SELECTION LIST menu displays. From this menu, choose the resources you want to exercise, and then select **commit** to start the **Run Exerciser** task. An intermediate pop-up window might display, stating system performance will be degraded. (The pop-up window does not display if the task had previously been selected). Press Enter and the EXERCISER OPTIONS menu prompts for the type of test to run.

The EXERCISER OPTIONS menu displays the following options:

- **Option 1 - Short Exercise.** Exercises the resources within a relatively short time and exits.
- **Option 2 - Extended Exercise.** Allows greater flexibility and control over resources and test duration.

After choosing the **Short Exercise** option, additional menus, pop-up windows and prompts may display for each resource. Read any text and carefully complete any prompts before committing. The exercisers start, and the **Device Status Screen** displays. The exercisers runs 5 to 10 minutes depending on the number of processors, processor speed, memory size, and I/O configuration.

After choosing the **Extended Exercise** option, additional menus, pop-up windows and prompts may display for each resource. Read any text and carefully fill out any prompts before committing. The **System Exerciser Main Menu** displays. From this menu, the exercisers can be activated through:

- Option 1 - Short Exercise
- Option 2 - Extended Exercise
- Option x (where exercises are exited)

For information about using other available options, see the help text.

When the task completes, any errors that were encountered are displayed for review. Finally, an **Exerciser Complete** pop-up window displays.

To continue, press Enter. The TASK SELECTION LIST menu displays.

If miscompare errors were encountered, run diagnostics on the resource. If the problem is not reported, contact your service support structure. If any other error were encountered, select and run the Error Log Analysis task. If Error Log Analysis does not report a problem, contact your service support structure.

Exerciser Commands (CMD)

Use the following commands as needed in the exerciser menus and reports. Not all commands are available in each menu or report.

CMD	Description
a	Acknowledge an error
b	Back one page
c	Toggle between cycle count and last error
e	View the AIX error log
f	Page forward one page
q	Return to Main Menu
r	Refresh screen
s	Enable or disable beep on error
x	Exit system exerciser

Abbreviations

The following list describes abbreviations used in the exerciser reports.

Acronym	Description
COE	Continue on error (use number to select).
CP	Device has run the specified number of cycles and is not running.
DD	The exerciser has been terminated by a signal.
ER	Device has stopped with an error.
HG	The device is hung.
HOE	Halt on error (use number to select).
RN	Device is running.
ST	Device is stopped.

Memory Exerciser

The memory exerciser is labeled `mem0`. The exerciser requests as many memory buffers as possible from AIX. The exerciser fills these buffers with specified bit patterns and then compares them to the original bit patterns. If memory is removed as a result of processors being reconfigured dynamically, the exerciser terminates.

On systems with multiple processors, a process is started for each processor. The free memory space is split evenly between the available processors, thus reducing the time required to exercise all of the memory.

Running this service aid requires 128 KB of free space in **/etc/lpp/diagnostics/data**.

Tape Exerciser

The tape exerciser is labeled `rmt`*x*, where *x* is the number of a specific device. The exerciser performs read, write, and compare operations using known data patterns. A tape device and Test Diagnostic Cartridge are required to run this exerciser. The actual Test Diagnostics Cartridge depends upon the specific tape device being tested. The exerciser automatically rewinds the tape. Test Requirements are:

- Tape device
- Test Diagnostic Cartridge (the part number depends upon tape device)

Diskette Exerciser

The diskette exerciser is labeled `fd`*x*, where *x* is the number of a specific device. The exerciser performs read, write, and compare operations using known data patterns. A scratch diskette is required to run this exerciser, data on the scratch diskette is destroyed. Test requirements are:

- Diskette device
- Scratch diskette (data on diskette is destroyed)

CD-ROM Exerciser

The CD-ROM exerciser is labeled `cd`*x*, where *x* is the number of a specific device. The exerciser performs read and compare operations using known data patterns. A CD-ROM device and a Test Disc is required to run this exerciser. Test requirements are:

- CD-ROM device
- Test Disc P/N 81F8902

Floating Point Exerciser

The floating point exerciser is labeled `procx`, where x is the number of the processor containing the floating point unit. The exerciser performs load/store and arithmetic operations using floating point registers and instructions. The floating point instructions are executed using static values and the outcome of the operation is compared with the expected result. Any mismatch results in an error condition. If the processor is in use by the exerciser and is removed as a result of dynamic logical partitioning, the exerciser terminates.

Save or Restore Hardware Management Policies

Note: This service aid runs on CHRP system units only.

Use this service aid to save or restore the settings from Ring Indicate Power-On Policy, Surveillance Policy, Remote Maintenance Policy and Reboot Policy. The following options are available:

- Save Hardware Management Policies

  This selection writes all of the settings for the hardware-management policies to the following file: **/etc/lpp/diagnostics/data/hmpolicies**
- Restore Hardware Management Policies

This selection restores all of the settings for the hardware-management policies from the contents of the following file: **/etc/lpp/diagnostics/data/hmpolicies**

You can access this service aid directly from the AIX command line, by typing:
`/usr/lpp/diagnostics/bin/uspchrp -a`

Save or Restore Service Processor Configuration

Note: This service aid runs on RSPC system units only.

Use this service aid to save or restore the Service Processor Configuration to or from a file. The Service Processor Configuration includes the Ring Indicator Power-On Configuration. The following options are available:

- Save Service Processor Configuration

  This selection writes all of the settings for the Ring Indicate Power On and the Service Processor to the following file: **/etc/lpp/diagnostics/data/spconfig**
- Restore Service Processor Configuration

  This selection restores all of the settings for the Ring Indicate Power On and the Service Processor from the following file: **/etc/lpp/diagnostics/data/spconfig**

SCSI Bus Analyzer

This service aid allows you to diagnose a SCSI bus problem in a freelance mode.

To use this service aid, the user should understand how a SCSI bus works. Use this service aid when the diagnostics cannot communicate with anything on the SCSI bus and cannot isolate the problem. Normally the procedure for finding a problem on the SCSI bus with this service aid is to start with a single device attached, ensure that it is working, then start adding additional devices and cables to the bus, ensuring that each one works. This service aid works with any valid SCSI bus configuration.

The SCSI Bus Service Aid transmits a SCSI Inquiry command to a selectable SCSI Address. The service aid then waits for a response. If no response is received within a defined amount of time, the service aid displays a timeout message. If an error occurs or a response is received, the service aid then displays one of the following messages:

- `The service aid transmitted a SCSI Inquiry Command and received a valid response back without any errors being detected.`
- `The service aid transmitted a SCSI Inquiry Command and did not receive any response or error status back.`
- `The service aid transmitted a SCSI Inquiry Command and the adapter indicated a SCSI bus error.`
- `The service aid transmitted a SCSI Inquiry Command and an adapter error occurred.`
- `The service aid transmitted a SCSI Inquiry Command and a check condition occur.`

When the SCSI Bus Service Aid is started a description of the service aid displays.

Pressing the Enter key displays the Adapter Selection menu. Use this menu to enter the address to transmit the SCSI Inquiry Command.

When the adapter is selected, the SCSI Bus Address Selection menu displays. Use this menu to enter the address to transmit the SCSI Inquiry Command.

After the address is selected, the SCSI Bus Test Run menu displays. Use this menu to transmit the SCSI Inquiry Command by pressing Enter. The service aid then indicates the status of the transmission. When the transmission is completed, the results of the transmission displays.

Notes:

1. A Check Condition can be returned when the bus or device is working correctly.
2. If the device is in use by another process, AIX does not send the command.

SCSI RAID Physical Disk Status and Vital Product Data

Note: This task was previously known as the PCI RAID Physical Disk Identify task.

Use this service aid when you want to look at the vital product data for a specific disk attached to a RAID adapter.This service aid displays all disks that are recognized by the PCI RAID adapter, along with their status, physical location, microde level, and other vital product data. The physical location of a disk consists of the channel number of the RAID adapter and the SCSI ID number of the position in the enclosure. The microde level is listed next to the physical location of the disk.

You can run this task directly from the command line with the following command syntax:

```
diag -c -d < device name > -T "identify"
```

Flags Description

-c Run the task without displaying menus. Only command line prompts are used.

-d RAID adapter device name (for example, `scraid0`).

-T Task to run.

SCSD Tape Drive Service Aid

This service aid allows you to obtain the status or maintenance information from a SCSD tape drive. Not all models of SCSD tape drive are supported.

The service aid provides the following options:

- Display time since a tape drive was last cleaned. The time since the drive was last cleaned displays on the screen, as well as a message regarding whether the drive is recommended to be cleaned.
- Copy a tape drive's trace table. The trace table of the tape drive is written to diskettes or a file. The diskettes must be formatted for DOS. Writing the trace table may require several diskettes. The actual number of diskettes is determined by the size of the trace table. Label the diskettes as follows:

  TRACE*x*.DAT (where *x* is a sequential diskette number). The complete trace table consists of the sequential concatenation of all the diskette data files.

  When the trace table is written to a disk file, the service aid prompts for a file name. The default name is: **/tmp/TRACE.***x*, where *x* is the AIX name of the SCSD tape drive being tested.
- Display or copy a tape drive's log sense information. The service aid provides options to display the log sense information to the screen, to copy it to a DOS formatted diskette, or to copy it to a file. The file name **LOGSENSE.DAT** is used when the log sense data is written to the diskette. The service aid prompts for a file name when you have selected that the log sense data is to be copied to a file.

This service aid can be run directly from the AIX command line. See the following command syntax (path is **/usr/lpp/diagnostics/bin/utape**):

```
utape [-h | -?] [-d device] [-n | -l | -t]
OR
utape -c -d device [-v] {-n | {-l | -t} { -D | -f [ filename]}}
```

Flag Description

-c Run the service aid without displaying menus. The return code indicates success or failure. The output is suppressed except for the usage statement and the numeric value for hours since cleaning (if **-n** and **-D** flags are used).

-D Copy data to diskette.

-f Copy data to the file name given after this flag or to a default file name if no name is specified.

-h, -? Display a usage statement and/or return code. If the **-c** flag is present, only the return code displays to indicate the service aid did not run. If the **-c** is not used, a usage statement displays and the service aid exits.

-l Display or copy log sense information.

-n Display time since drive was last cleaned.

-t Copy trace table.

-v Verbose mode. If the **-c** flag is present, the information displays on the screen. If the **-n** flag is present, the information about tape-head cleaning is printed.

Spare Sector Availability

This selection checks the number of spare sectors available on the optical disk. The spare sectors are used to reassign when defective sectors are encountered during normal usage or during a format and certify operation. Low availability of spare sectors indicates that the disk must be backed up and replaced. Formatting the disk does not improve the availability of spare sectors.

You can run this task directly from the AIX command line. See the following command syntax: `diag -c -d` *deviceName* `-T chkspares`

SSA Service Aid

This service aid provides tools for diagnosing and resolving problems on SSA-attached devices. The following tools are provided:

- Set Service Mode
- Link Verification
- Configuration Verification
- Format and Certify Disk

System Fault Indicator

For a description of the System Fault Indicator task, see “Fault Indicators” on page 172.

System Identify Indicator

For a description of the System Fault Indicator task, see “Identify and System Attention Indicators” on page 180.

Update Disk-Based Diagnostics

This service aid allows fixes (APARs) to be applied.

This task invokes the SMIT Update Software by Fix (APAR) task. The task allows the input device and APARs to be selected. You can install any APAR using this task.

Update System or Service Processor Flash

Attention: If the system is running on a logically partitioned system, ask the customer or system administrator if a service partition has been designated.

- If a service partition has been designated, ask the customer or system administrator to shut down all of the partitions except the one with service authority. The firmware update can then be done using the service aid or the AIX command line in that partition.
- If a service partition has not been designated, the system must be shut down. If the firmware update image is available on backup diskettes, the firmware update can then be done from the service processor menus as a privileged user. If the firmware update image is in a file on the system, reboot the system in a full system partition and use the following normal firmware update procedures.

If the system is already in a full system partition, use the following normal firmware update procedures.

Note: This service aid runs on CHRP system units only.

This selection updates the system or service processor flash. Some systems may have separate images for system and service processor firmware; newer systems have a combined image that contains both in one image.

Look for additional update and recovery instructions with the update kit. You need to know the fully qualified path and file name of the flash update image file provided in the kit. If the update image file is on a diskette, the service aid can list the files on the diskette for selection. The diskette must be a valid backup format diskette.

Refer to the update instructions with the kit, or the service guide for the system unit to determine the current level of the system unit or service processor flash memory.

When this service aid is run from online diagnostics, the flash update image file is copied to the **/var** file system. It is recommended that the source of the microcode that you want to download be put into the **/etc/microcode** directory on the system. If there is not enough space in the **/var** file system for the new flash update image file, an error is reported. If this error occurs, exit the service aid, increase the size of the **/var** file system, and retry the service aid. After the file is copied, a screen requests confirmation before continuing with the flash update. When you continue the update flash, the system reboots using the **shutdown -u** command. The system does not return to the diagnostics, and the current flash image is not saved. After the reboot, you can remove the **/var/update_flash_image** file.

When this service aid is run from standalone diagnostics, the flash update image file is copied to the file system from diskette or from the NIM server. Using a diskette, the user must provide the image on backup format diskette because the user does not have access to remote file systems or any other files that are on the system. If using the NIM server, the microcode image must first be copied onto the NIM server in the **/usr/lib/microcode** directory pointed to the NIM SPOT (from which you plan to have the NIM client boot standalone diagnostics) prior to performing the NIM boot of diagnostics. Next, a NIM check operation must be run on the SPOT containing the microcode image on the NIM server. After performing the NIM boot of diagnostics one can use this service aid to update the microcode from the NIM server by choosing the **/usr/lib/microcode** directory when prompted for the source of the microcode that you want to update. If not enough space is available, an error is reported, stating additional system memory is needed. After the file is copied, a screen requests confirmation before continuing with the flash update. When you continue with the update, the system reboots using the **reboot -u** command. You may receive a `Caution: some process(es) wouldn't die` message during the reboot process, you can ignore this message. The current flash image is not saved.

You can use the **update_flash** command in place of this service aid. The command is located in the **/usr/lpp/diagnostics/bin** directory. The command syntax is as follows:

```
update_flash [-q] -f file_name
update_flash [-q] -D device_name -f file_name
update_flash [-q] -D update_flash [-q] -D device_name -l
```

Attention: The **update_flash** command reboots the entire system. Do not use this command if more than one user is logged in to the system.

Flag	Description
-D	Specifies that the flash update image file is on diskette. The *device_name* variable specifies the diskette drive. The default *device_name* is `/dev/fd0`.
-f	Flash update image file source. The *file_name* variable specifies the fully qualified path of the flash update image file.
-l	Lists the files on a diskette, from which the user can choose a flash update image file.
-q	Forces the **update_flash** command to update the flash EPROM and reboot the system without asking for confirmation.

Update System Flash

Note: This service aid runs on RSPC system units only and is not supported on AIX 5.2 or later.

This selection updates the system flash for RSPC systems. The user provides a valid binary image either on a diskette or with a qualified path name. The diskettes can be in DOS or backup format.

The flash update image is copied to the **/var** file system. If not enough space is available in the file system for the flash update image file, an error is reported. If this error occurs, increase the file size of the **/var** file system. The current flash image is not saved. The command automatically removes the **/var/update_flash_image** file.

After user confirmation, the command reboots the system twice to complete the flash update.

7135 RAIDiant Array Service Aid

The 7135 RAIDiant Array service aids contain the following functions:

- Certify LUN

  Reads and checks each block of data in the logical unit number (LUN). If excessive errors are encountered, the user is notified.
- Certify Spare Physical Disk

  Allows the user to certify (check the integrity of the data) on drives designated as spares.
- Format Physical Disk

  Formats a selected disk drive.
- Array Controller Microcode Download

  Allows the microcode on the 7135 controller to be updated when required.
- Physical Disk Microcode Download

  Updates the microcode on any of the disk drives in the array.
- Update EEPROM

  Updates the contents of the EEPROM on a selected controller.
- Replace Controller

  Replaces a controller in the array.

Command Examples

To download the adapter microcode, use this command syntax: `diag -c -d` *deviceName* `-T "download [-B][-D][-P]"`

Flag	Description
-B	Download boot block microcode (default to functional microcode)
-D	Microcode is on diskette (default to **/etc/microcode** directory)
-P	Download the previous level of microcode (default to latest level)

To download physical disk microcode, use this command syntax : `diag -c -d` *deviceName* `-T "download -l` *ChId* `[-D][-P]"`

Flag	Description
-D	Microcode is on diskette (default to /etc/microcode directory)
-I	Physical disk channel/ID (for example, 27)
-P	Download the previous level of microcode (default to latest level)

To format a physical disk, use this command syntax: `diag -c -d` *deviceName* `-T "format -l` *ChId*`"`

Flag	Description
-I	Physical disk channel/ID (for example, 27)

To certify a physical disk, use this command syntax: `diag -c -d` *deviceName* `-T "certify -l` *ChId*`"`

Flag	Description
-I	Physical disk channel/ID (for example, 23)

To identify a physical disk, use this command syntax: `diag -c -d` *deviceName* `-T "identify"`

7318 Serial Communications Network Server Service Aid

This service aid provides a tool for diagnosing terminal server problems.

Chapter 29. Diagnostics Numbers and Location Codes

This chapter provides descriptions for the numbers and characters that display on the operator panel and descriptions of the location codes used to identify a particular item.

Operator Panel Display Numbers

This section contains a list of the various numbers and characters that display in the operator panel display. There are three categories of numbers and characters. The first group tracks the progress of the configuration program. The second group tracks the progress of the diagnostics. The third group provides information about messages that follow an 888 sequence.

Configuration Program Indicators

The numbers in this list display on the operator panel as the system loads the operating system and prepares the hardware by loading software drivers.

Note: Some systems may produce 4-digit codes. If the leftmost digit of a 4-digit code is 0, use the three rightmost digits.

2E6 The PCI Differential Ultra SCSI adapter or the Universal PCI Differential Ultra SCSI adapter being configured.

2E7 Configuration method unable to determine if the SCSI adapter type is SE or DE type.

440 9.1GB Ultra SCSI Disk Drive being identified or configured.

441 18.2 GB Ultra SCSI Disk Drive being identified or configured.

444 2-Port Multiprotocol PCI Adapter (ASIC) being identified or configured.

447 PCI 64-bit Fibre Channel Arbitrated Loop Adapter being configured.

500 Querying Standard I/O slot.

501 Querying card in Slot 1.

502 Querying card in Slot 2.

503 Querying card in Slot 3.

504 Querying card in Slot 4.

505 Querying card in Slot 5.

506 Querying card in Slot 6.

507 Querying card in Slot 7.

508 Querying card in Slot 8.

510 Starting device configuration.

511 Device configuration completed.

512 Restoring device configuration files from media.

513 Restoring basic operating system installation files from media.

516 Contacting server during network boot.

517 Mounting client remote file system during network IPL.

518 Remote mount of the **root (/)** and **/usr** file systems failed during network boot.

520 Bus configuration running.

521 **/etc/init** invoked **cfgmgr** with invalid options; **/etc/init** has been corrupted or incorrectly modified (irrecoverable error).

522 The configuration manager has been invoked with conflicting options (irrecoverable error).

523 The configuration manager is unable to access the ODM database (irrecoverable error).

524 The configuration manager is unable to access the **config.rules** object in the ODM database (irrecoverable error).

525 The configuration manager is unable to get data from a customized device object in the ODM database (irrecoverable error).

526 The configuration manager is unable to get data from a customized device driver object in the ODM database (irrecoverable error).

527 The configuration manager was invoked with the phase 1 flag; running phase 1 at this point is not permitted (irrecoverable error).

528 The configuration manager cannot find sequence rule, or no program name was specified in the ODM database (irrecoverable error).

529 The configuration manager is unable to update ODM data (irrecoverable error).

530 The **savebase** program returned an error.

531 The configuration manager is unable to access the **PdAt** object class (irrecoverable error).

532 There is not enough memory to continue (malloc failure); irrecoverable error.

533 The configuration manager could not find a configuration method for a device.

534 The configuration manager is unable to acquire database lock (irrecoverable error).

535 HIPPI diagnostics interface driver being configured.

536 The configuration manager encountered more than one sequence rule specified in the same phase (irrecoverable error).

537 The configuration manager encountered an error when invoking the program in the sequence rule.

538 The configuration manager is going to invoke a configuration method.

539 The configuration method has terminated, and control has returned to the configuration manager.

541 A DLT tape device is being configured.

549 Console could not be configured for the Copy a System Dump Menu.

551 IPL vary-on is running.

552 IPL vary-on failed.

553 IPL phase 1 is complete.

554 The boot device could not be opened or read, or unable to define NFS swap device during network boot.

555 An ODM error occurred when trying to vary-on the rootvg, or unable to create an NFS swap device during network boot.

556 Logical Volume Manager encountered error during IPL vary-on.

557 The root file system does not mount.

558 There is not enough memory to continue the system IPL.

559 Less than 2 MB of good memory are available to load the AIX kernel.

569 FCS SCSI protocol device is being configured (32 bits).

570 Virtual SCSI devices being configured.

571 HIPPI common function device driver being configured.

572 HIPPI IPI-3 master transport driver being configured.

573 HIPPI IPI-3 slave transport driver being configured.

574 HIPPI IPI-3 transport services user interface device driver being configured.

575 A 9570 disk-array driver being configured.

576 Generic async device driver being configured.

577 Generic SCSI device driver being configured.

578 Generic commo device driver being configured.

579 Device driver being configured for a generic device.

580 HIPPI TCP/IP network interface driver being configured.

581 Configuring TCP/IP.

582 Configuring Token-Ring data link control.

583 Configuring an Ethernet data link control.

584 Configuring an IEEE Ethernet data link control.

585 Configuring an SDLC MPQP data link control.

586 Configuring a QLLC X.25 data link control.

587 Configuring a NETBIOS.

588 Configuring a Bisync Read-Write (BSCRW).

589 SCSI target mode device being configured.

590 Diskless remote paging device being configured.

591 Configuring an LVM device driver.

592 Configuring an HFT device driver.

593 Configuring SNA device drivers.

594 Asynchronous I/O being defined or configured.

595 X.31 pseudo-device being configured.

596 SNA DLC/LAPE pseudo-device being configured.

597 OCS software being configured.

598 OCS hosts being configured during system reboot.

599 Configuring FDDI data link control.

59B FCS SCSI protocol device being configured (64 bits).

5C0 Streams-based hardware drive being configured.

5C1 Streams-based X.25 protocol being configured.

5C2 Streams-based X.25 COMIO emulator driver being configured

5C3 Streams-based X.25 TCP/IP interface driver being configured.

5C4 FCS adapter device driver being configured.

5C5 SCB network device driver for FCS being configured.

5C6 AIX SNA channel being configured.

600 Starting network boot portion of **/sbin/rc.boot**.

602 Configuring network parent devices.

603 **/usr/lib/methods/defsys, /usr/lib/methods/cfgsys,** or **/usr/lib/methods/cfgbus** failed.

604 Configuring physical network boot device.

605 Configuration of physical network boot device failed.

606 Running **/usr/sbin/ifconfig** on logical network boot device.

607 **/usr/sbin/ifconfig** failed.

608 Attempting to retrieve the **client.info** file with **tftp**.

Note: Note that a flashing 608 indicates multiple attempt(s) to retrieve the **client_info** file are occurring.

609 The **client.info** file does not exist or it is zero length.

60B 18.2 GB 68-pin LVD SCSI Disk Drive being configured.

610 Attempting remote mount of NFS file system.

611 Remote mount of the NFS file system failed.

612 Accessing remote files; unconfiguring network boot device.

614 Configuring local paging devices.

615 Configuration of a local paging device failed.

616 Converting from diskless to dataless configuration.

617 Diskless to dataless configuration failed.

618 Configuring remote (NFS) paging devices.

619 Configuration of a remote (NFS) paging device failed.

61B 36.4 GB 80-pin LVD SCSI Disk Drive being configured.

61D 36.4 GB 80-pin LVD SCSI Disk Drive being configured.

61E 18.2 GB 68-pin LVD SCSI Disk Drive being configured.

620 Updating special device files and ODM in permanent file system with data from boot RAM file system.

621 9.1 GB LVD 80-pin SCSI Drive being configured.

622 Boot process configuring for operating system installation.

62D 9.1 GB 68-pin LVD SCSI Disk Drive being configured.

62E 9.1GB 68-pin LVD SCSI Disk Drive being configured.

636 TURBOWAYS® 622 Mbps PCI MMF ATM Adapter.

637 Dual Channel PCI-2 Ultra2 SCSI Adapter being configured.

638 4.5 GB Ultra SCSI Single Ended Disk Drive being configured.

639 9.1 GB 10K RPM Ultra SCSI Disk Drive (68-pin).

63A See 62D.

63B 9.1 GB 80-pin LVD SCSI Disk Drive being configured.

63C See 60B.

63D 18.2 GB 80-pin LVD SCSI Disk Drive being configured.

63E 36.4 GB 68-pin LVD SCSI Disk Drive being configured.

63F See 61B.

640 9.1 GB 10K RPM Ultra SCSI Disk Drive (80-pin).

646 High-Speed Token-Ring PCI Adapter being configured.

64A See 62E.

64B 9.1 GB 80-pin LVD SCSI Disk Drive being configured.

64C See 61E.

64D 18.2 GB LVD 80-pin Drive/Carrier being configured.

64E 36.4 GB 68-pin LVD SCSI Disk Drive being configured.

64F See 61D.

650 IBM SCSD disk drive being configured.

653 18.2 GB Ultra-SCSI 16-bit Disk Drive being configured.

655 GXT130P Graphics adapter being configured.

657 GXT2000P graphics adapter being configured.

658 PCI Fibre Channel Disk Subsystem Controller being identified or configured.

659 2102 Fibre Channel Disk Subsystem Controller Drawer being identified or configured.

660 2102 Fibre Channel Disk Array being identified or configured.

662 Ultra2 Integrated SCSI controller.

663 The ARTIC960RxD Digital Trunk Quad PCI Adapter or the ARTIC960RxF Digital Trunk Resource Adapter being configured.

664 32x (MAX) SCSI-2 CD-ROM drive being configured.

667 PCI 3-Channel Ultra2 SCSI RAID Adapter being configured.

669 PCI Gigabit Ethernet Adapter being configured.

66C 10/100/1000 Base-T Ethernet PCI Adapter.

66D PCI 4-Channel Ultra-3 SCSI RAID Adapter.

66E 4.7 GB DVD-RAM drive.

674 ESCON® Channel PCI Adapter being configured.

677 PCI 32-bit Fibre Channel Arbitrated Loop Adapter being configured.

67B PCI Cryptographic Coprocessor being configured.

682 20x (MAX) SCSI-2 CD-ROM Drive being configured.

689 4.5 GB Ultra SCSI Single Ended Disk Drive being configured.

68C 20 GB 4-mm Tape Drive being configured.

68E POWER GXT6000P PCI Graphics Adapter.

690 9.1 GB Ultra SCSI Single Ended Disk Drive being configured.

69b 64-bit/66 MHz PCI ATM 155 MMF PCI adapter being configured.

69d 64-bit/66 MHz PCI ATM 155 UTP PCI adapter being configured.

6CC SSA disk drive being configured.

700 A 1.1 GB 8-bit SCSI disk drive being identified or configured.

701 A 1.1 GB 16-bit SCSI disk drive being identified or configured.

702 A 1.1 GB 16-bit differential SCSI disk drive being identified or configured.

703 A 2.2 GB 8-bit SCSI disk drive being identified or configured.

704 A 2.2 GB 16-bit SCSI disk drive being identified or configured.

705 The configuration method for the 2.2 GB 16-bit differential SCSI disk drive is being run. If an irrecoverable error occurs, the system halts.

706 A 4.5 GB 16-bit SCSI disk drive being identified or configured.

707 A 4.5 GB 16-bit differential SCSI disk drive being identified or configured.

708 An L2 cache being identified or configured.

710 POWER GXT150M graphics adapter being identified or configured.

711 Unknown adapter being identified or configured.

712 Graphics slot bus configuration is executing.

713 The IBM ARTIC960 device being configured.

714 A video capture adapter being configured.

715 The Ultramedia Services audio adapter being configured. This number displays briefly on the panel.

717 TP Ethernet Adapter being configured.

718 GXT500 Graphics Adapter being configured.

720 Unknown read/write optical drive type being configured.

721 Unknown disk or SCSI device being identified or configured.

722 Unknown disk being identified or configured.

723 Unknown CD-ROM being identified or configured.

724 Unknown tape drive being identified or configured.

725 Unknown display adapter being identified or configured.

726 Unknown input device being identified or configured.

727 Unknown async device being identified or configured.

728 Parallel printer being identified or configured.

729 Unknown parallel device being identified or configured.

730 Unknown diskette drive being identified or configured.

731 PTY being identified or configured.

732 Unknown SCSI initiator type being configured.

733 7 GB 8-mm tape drive being configured.

734 4x SCSI-2 640 MB CD-ROM Drive being configured.

736 Quiet Touch keyboard and speaker cable being configured.

741 1080 MB SCSI Disk Drive being configured.

745 16 GB 4-mm Tape Auto Loader being configured.

746 SCSI-2 Fast/Wide PCI Adapter being configured.

747 SCSI-2 Differential Fast/Wide PCI Adapter being configured.

749 7331 Model 205 Tape Library being configured.

751 SCSI 32-bit SE F/W RAID Adapter being configured.

754 1.1 GB 16-bit SCSI disk drive being configured.

755 2.2 GB 16-bit SCSI disk drive being configured.

756 4.5 GB 16-bit SCSI disk drive being configured.

757 External 13 GB 1.5M/s 1/4-inch tape being configured.

763 SP Switch MX Adapter being configured.

764 SP System Attachment Adapter being configured.

772 4.5 GB SCSI F/W Disk Drive being configured.

773 9.1 GB SCSI F/W Disk Drive being configured.

774 9.1 GB External SCSI Disk Drive being configured.

776 PCI Token-Ring Adapter being identified or configured.

777 10/100 Ethernet Tx PCI Adapter being identified or configured.

778 POWER GXT3000P 3D PCI Graphics adapter being configured.

77B 4-Port 10/100 Ethernet Tx PCI Adapter being identified or configured.

77c A 1.0 GB 16-bit SCSI disk drive being identified or configured.

783 4-mm DDS-2 Tape Autoloader being configured.

789 2.6 GB External Optical Drive being configured.

78B POWER GXT4000P PCI Graphics Adapter.

78C PCI bus configuration executing.

78D GXT300P 2D Graphics adapter being configured.

790 Multi-bus Integrated Ethernet Adapter being identified or configured.

797 TURBOWAYS® 155 UTP/STP ATM Adapter being identified or configured.

798 Video streamer adapter being identified or configured.

799 2-Port Multiprotocol PCI adapter being identified or configured.

79c ISA bus configuration executing.

7C0 CPU/System Interface being configured.

7C1 Business Audio Subsystem being identified or configured.

7cc PCMCIA bus configuration executing.

800 TURBOWAYS® 155 MMF ATM Adapter being identified or configured.

803 7336 Tape Library robotics being configured.

804 8x Speed SCSI-2 CD-ROM Drive being configured.

806 POWER GXT800 PCI Graphics adapter being configured.

807 SCSI Device Enclosure being configured.

80c SSA 4-Port Adapter being identified or configured.

811 Processor complex being identified or configured.

812 Memory being identified or configured.

813 Battery for time-of-day, NVRAM, and so on being identified or configured, or system I/O control logic being identified or configured.

814 NVRAM being identified or configured.

815 Floating-point processor test.

816 Operator panel logic being identified or configured.

817 Time-of-day logic being identified or configured.

819 Graphics input device adapter being identified or configured.

821 Standard keyboard adapter being identified or configured.

823 Standard mouse adapter being identified or configured.

824 Standard tablet adapter being identified or configured.

825 Standard speaker adapter being identified or configured.

826 Serial Port 1 adapter being identified or configured.

827 Parallel port adapter being identified or configured.

828 Standard diskette adapter being identified or configured.

831 3151 adapter being identified or configured, or Serial Port 2 being identified or configured.

834 64-port async controller being identified or configured.

835 16-port async concentrator being identified or configured.

836 128-port async controller being identified or configured.

837 16-port remote async node being identified or configured.

838 Network Terminal Accelerator Adapter being identified or configured.

839 7318 Serial Communications Server being configured.

840 PCI Single-Ended Ultra SCSI Adapter being configured.

841 8-port async adapter (EIA-232) being identified or configured.

842 8-port async adapter (EIA-422A) being identified or configured.

843 8-port async adapter (MIL-STD-188) being identified or configured.

844 7135 RAIDiant Array disk drive subsystem controller being identified or configured.

845 7135 RAIDiant Array disk drive subsystem drawer being identified or configured.

846 RAIDiant Array SCSI 1.3 GB Disk Drive being configured.

847 16-port serial adapter (EIA-232) being identified or configured.

848 16-port serial adapter (EIA-422) being identified or configured.

849 X.25 Interface Coprocessor/2 adapter being identified or configured.

850 Token-Ring network adapter being identified or configured.

851 T1/J1 Portmaster® adapter being identified or configured.

852 Ethernet adapter being identified or configured.

854 3270 Host Connection Program/6000 connection being identified or configured.

855 Portmaster Adapter/A being identified or configured.

857 FSLA adapter being identified or configured.

858 5085/5086/5088 adapter being identified or configured.

859 FDDI adapter being identified or configured.

85c Token-Ring High-Performance LAN adapter being identified or configured.

861 Optical adapter being identified or configured.

862 Block Multiplexer Channel Adapter being identified or configured.

865 ESCON Channel Adapter or emulator being identified or configured.

866 SCSI adapter being identified or configured.

867 Async expansion adapter being identified or configured.

868 SCSI adapter being identified or configured.

869 SCSI adapter being identified or configured.

870 Serial disk drive adapter being identified or configured.

871 Graphics subsystem adapter being identified or configured.

872 Grayscale graphics adapter being identified or configured.

874 Color graphics adapter being identified or configured.

875 Vendor generic communication adapter being configured.

876 8-bit color graphics processor being identified or configured.

877 POWER Gt3™/POWER Gt4™ being identified or configured.

878 POWER Gt4™ graphics processor card being configured.

879 24-bit color graphics card, MEV2 being configured.

880 POWER Gt1™ adapter being identified or configured.

887 Integrated Ethernet adapter being identified or configured.

889 SCSI adapter being identified or configured.

890 SCSI-2 Differential Fast/Wide and Single-Ended Fast/Wide Adapter/A being configured.

891 Vendor SCSI adapter being identified or configured.

892 Vendor display adapter being identified or configured.

893 Vendor LAN adapter being identified or configured.

894 Vendor async/communications adapter being identified or configured.

895 Vendor IEEE 488 adapter being identified or configured.

896 Vendor VME bus adapter being identified or configured.

897 S/370™ Channel Emulator adapter being identified or configured.

898 POWER Gt1x™ graphics adapter being identified or configured.

899 3490 attached tape drive being identified or configured.

89c A multimedia SCSI CD-ROM being identified or configured.

900 GXT110P Graphics Adapter being identified or configured.

901 Vendor SCSI device being identified or configured.

902 Vendor display device being identified or configured.

903 Vendor async device being identified or configured.

904 Vendor parallel device being identified or configured.

905 Vendor other device being identified or configured.

908 POWER GXT1000 Graphics subsystem being identified or configured.

910 1/4 GB Fiber Channel/266 Standard Adapter being identified or configured.

911 Fiber Channel/1063 Adapter Short Wave being configured.

912 2.0 GB SCSI-2 differential disk drive being identified or configured.

913 1.0 GB differential disk drive being identified or configured.

914 5 GB 8-mm differential tape drive being identified or configured.

915 4 GB 4-mm tape drive being identified or configured.

916 Non-SCSI vendor tape adapter being identified or configured.

917 A 2.0 GB 16-bit differential SCSI disk drive being identified or configured.

918 A 2.0 GB 16-bit single-ended SCSI disk drive being identified or configured.

920 Bridge Box being identified or configured.

921 101 keyboard being identified or configured.

922 102 keyboard being identified or configured.

923 Kanji keyboard being identified or configured.

924 Two-button mouse being identified or configured.

925 Three-button mouse being identified or configured.

926 5083 tablet being identified or configured.

927 5083 tablet being identified or configured.

928 Standard speaker being identified or configured.

929 Dials being identified or configured.

930 Lighted program function keys (LPFK) being identified or configured.

931 IP router being identified or configured.

933 Async planar being identified or configured.

934 Async expansion drawer being identified or configured.

935 3.5-inch diskette drive being identified or configured.

936 5.25-inch diskette drive being identified or configured.

937 An HIPPI adapter being configured.

938 Serial HIPPI PCI adapter being configured.

942 POWER GXT 100 graphics adapter being identified or configured.

943 A 3480 or 3490 control unit attached to a System/370 Channel Emulator/A adapter are being identified or configured.

944 100 MB ATM adapter being identified or configured.

945 1.0 GB SCSI differential disk drive being identified or configured.

946 Serial port 3 adapter being identified or configured.

947 A 730 MB SCSI disk drive being configured.

948 Portable disk drive being identified or configured.

949 Unknown direct bus-attach device being identified or configured.

950 Missing SCSI device being identified or configured.

951 670 MB SCSI disk drive being identified or configured.

952 355 MB SCSI disk drive being identified or configured.

953 320 MB SCSI disk drive being identified or configured.

954 400 MB SCSI disk drive being identified or configured.

955 857 MB SCSI disk drive being identified or configured.

956 670 MB SCSI disk drive electronics card being identified or configured.

957 120 MB DBA disk drive being identified or configured.

958 160 MB DBA disk drive being identified or configured.

959 160 MB SCSI disk drive being identified or configured.

960 1.37 GB SCSI disk drive being identified or configured.

964 Internal 20 GB 8-mm tape drive identified or configured.

968 1.0 GB SCSI disk drive being identified or configured.

970 Half-inch, 9-track tape drive being identified or configured.

971 150 MB 1/4-inch tape drive being identified or configured.

972 2.3 GB 8-mm SCSI tape drive being identified or configured.

973 Other SCSI tape drive being identified or configured.

974 CD-ROM drive being identified or configured.

975 An optical disk drive being identified or configured.

977 M-Audio Capture and Playback Adapter being identified or configured.

981 540 MB SCSI-2 single-ended disk drive being identified or configured.

984 1 GB 8-bit disk drive being identified or configured.

985 M-Video Capture Adapter being identified or configured.

986 2.4 GB SCSI disk drive being identified or configured.

987 An Enhanced SCSI CD-ROM drive being identified or configured.

989 200 MB SCSI disk drive being identified or configured.

990 2.0 GB SCSI-2 single-ended disk drive being identified or configured.

991 525 MB 1/4-inch cartridge tape drive being identified or configured.

994 5 GB 8-mm tape drive being identified or configured.

995 1.2GB 1/4-inch cartridge tape drive being identified or configured.

996 A single-port, multiprotocol communications adapter being identified or configured.

997 FDDI adapter being identified or configured.

998 2.0 GB 4-mm tape drive being identified or configured.

999 7137 or 3514 Disk Array Subsystem being configured.

D46 Token-Ring cable.

D81 T2 Ethernet Adapter being configured.

2520 PCI Dual-Channel Ultra-3 SCSI adapter being identified or configured.

2530 10/100 Mbps Ethernet PCI Adapter II being configured.

25C2 IBM Dual Port Gigabit SX Ethernet PCI-X Adapter

25C3 IBM 10/100/1000 Base-TX Dual Port PCI-Adapter

Diagnostic Load Progress Indicators

Note: Some systems may produce 4-digit codes. If the leftmost digit of a 4-digit code is 0, use the three rightmost digits.

c00 AIX Install/Maintenance loaded successfully.

c01 Insert the first diagnostic diskette.

c02 Diskettes inserted out of sequence.

c03 The wrong diskette is in diskette drive.

c04 The loading stopped with an irrecoverable error.

c05 A diskette error occurred.

c06 The **rc.boot** configuration shell script is unable to determine type of boot.

c07 Insert the next diagnostic diskette.

c08 RAM file system started incorrectly.

c09 The diskette drive is reading or writing a diskette.

c20 An unexpected halt occurred, and the system is configured to enter the kernel debug program instead of entering a system dump.

c21 The **ifconfig** command was unable to configure the network for the client network host.

c22 The **tftp** command was unable to read client's *ClientHostName*. **info** file during a client network boot.

c24 Unable to read client's *ClientHostName*.**info** file during a client network boot.

c25 Client did not mount remote miniroot during network install.

c26 Client did not mount the **/usr** file system during the network boot.

c29 The system was unable to configure the network device.

c31 Select the console display for the diagnostics. To select No console display, set the key mode switch to Normal, then to Service. The diagnostic programs then load and run the diagnostics automatically. If you continue to get the message, check the cables and make sure you are using the serial port.

c32 A directly attached display (HFT) was selected.

c33 A TTY terminal attached to serial ports S1 or S2 was selected.

c34 A file was selected. The console messages store in a file.

c35 No console found.

c40 Configuration files are being restored.

c41 Could not determine the boot type or device.

c42 Extracting data files from diskette.

c43 Cannot access the boot/install tape.

c44 Initializing installation database with target disk information.

c45 Cannot configure the console.

c46 Normal installation processing.

c47 Could not create a physical volume identifier (PVID) on disk.

c48 Prompting you for input.

c49 Could not create or form the JFS log.

c50 Creating root volume group on target disks.

c51 No paging devices were found.

c52 Changing from RAM environment to disk environment.

c53 Not enough space in the **/tmp** directory to do a preservation installation.

c54 Installing either BOS or additional packages.

c55 Could not remove the specified logical volume in a preservation installation.

c56 Running user-defined customization.

c57 Failure to restore BOS.

c58 Displaying message to turn the key.

c59 Could not copy either device special files, device ODM, or volume group information from RAM to disk.

c61 Failed to create the boot image.

c62 Loading platform dependent debug files.

c63 Loading platform dependent data files.

c64 Failed to load platform dependent data files.

c70 Problem Mounting diagnostic CD-ROM disc.

c99 Diagnostics have completed. This code is only used when there is no console.

Fxx (xx is any number) Refer to Firmware chapter of the service manual.

Dump Progress Indicators (Dump Status Codes)

The following dump progress indicators, or dump status codes, are part of a Type 102 message.

Note: When a lowercase c is listed, it displays in the lower half of the character position. Some systems produce 4-digit codes, the two leftmost positions can have blanks or zeros. Use the two rightmost digits.

0c0 The dump completed successfully.

0c1 The dump failed due to an I/O error.

0c2 A dump, requested by the user, is started.

0c3 The dump is inhibited.

0c4 The dump device is not large enough.

0c5 The dump did not start, or the dump crashed.

0c6 Dumping to a secondary dump device.

0c7 Reserved.

0c8 The dump function is disabled.

0c9 A dump is in progress.

0cc Unknown dump failure.

Crash Codes

Note: Some systems may produce 4-digit codes. If the leftmost digit of a 4-digit code is 0, use the three rightmost digits.

The crash codes that follow are part of a Type 102 message. These crash codes are grouped into three categories:

Category 1 Dump analysis is the appropriate first action in Problem Determination. Begin the Problem Determination process with software support.

Category 2 Dump analysis most likely will not aid in Problem Determination. Begin the Problem Determination process with hardware support.

Category 3 Both software and hardware support may be needed in Problem Determination, go to Chapter 9, “MAP 0070: 888 Sequence in Operator Panel Display”, on page 51 to assist in problem isolation.

Category 1

300 Data storage interrupt from the processor.

32x Data storage interrupt because of an I/O exception from IOCC.

38x Data storage interrupt because of an I/O exception from SLA.

400 Instruction storage interrupt.

700 Program interrupt.

Category 2

200 Machine check because of a memory bus error.

201 Machine check because of a memory timeout.

202 Machine check because of a memory card failure.

203 Machine check because of an out of range address.

204 Machine check because of an attempt to write to ROS.

205 Machine check because of an uncorrectable address parity.

206 Machine check because of an uncorrectable ECC error.

207 Machine check because of an unidentified error.

208 Machine check due to an L2 uncorrectable ECC.

500 External interrupt because of a scrub memory bus error.

501 External interrupt because of an unidentified error.

51x External interrupt because of a DMA memory bus error.

52x External interrupt because of an IOCC channel check.

53x External interrupt from an IOCC bus timeout; x represents the IOCC number.

54x External interrupt because of an IOCC keyboard check.

800 Floating point is not available.

Category 3

000 Unexpected system interrupt.

558 There is not enough memory to continue the IPL.

600 AIX 4.3.3.3 and above: Alignment Interrupt. If pre-AIX 4.3.3.3: AIX has crashed because the Portability Assist Layer (PAL) for this machine type has detected a problem.

605 AIX 4.3.3.3 and above: AIX has crashed because the Portability Assist Layer (PAL) for this machine type has detected a problem.

Location Codes for RSPC Model Architecture System Units

Notes:

1. RSPC systems are only supported with AIX or Diagnostic versions below 5.2.0
2. You need to know which system architecture the system unit on which you are working uses. If you are working with a CHRP model, use the “Location Codes for CHRP Model Architecture System Units” on page 207. If you do not know which model you have, refer to “Determining System Architecture” on page 143 before proceeding.

Because the same diagnostic programs are used on all system units, a location code is used to physically locate a failing device or unit. The location code is displayed along with the service request number (SRN) when the diagnostic programs isolate a failure. If the location code is not known, you can run the Display Previous Diagnostic Results service aid to display the results of the last time the diagnostic programs were run.

The basic format of the system unit's location code is:

```
AB-CD-EF-GH  non-SCSI
AB-CD-EF-G,H  SCSI
```

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

```
AB-CD-EF-GH
 |  |  |  |
 |  |  |  Device/FRU/Port ID
 |  |  Connector ID
 |  Slot or Adapter Number
 Bus Type
```

- AB identifies a bus type.
- CD identifies a slot or adapter number.
- EF is the connector identifier, used to identify the adapter connector to which a resource is attached.
- GH identifies a port, address, memory module, device, or FRU. GH has several meanings depending upon the resource type, they are as follows:
  - For memory cards, GH defines a memory module. Values for GH are 1 through 16.

    For systems that have memory modules that plug directly into the system planar, the location code is 00-00-00-GH where GH is the memory module slot. For systems that have memory cards with memory modules, the location code is 00-CD-EF-GH, where CD is the card slot and GH is the memory module slot.
  - For L2 caches, GH defines the cache. Values for GH are 1 through 16.
  - For PCMCIA devices, GH defines the PCMCIA. Values for GH are 1 through 16.
  - For async devices, GH defines the port on the fanout box. Values are 00 to 15.
  - For a diskette drive, H defines which diskette drive 1 or 2. G is always 0.
  - For all other devices, GH is equal to 00.

For integrated adapters, EF-GH is the same as the definition for a pluggable adapter. For example, the location code for a diskette drive is 01-A0-00-00. A second diskette drive is 01-A0-00-01.

For SCSI, the location code is defined as follows:

```
AB-CD-EF-G,H
 |  |  |  | |
 |  |  |  | Logical Unit Address of SCSI Device
 |  |  | Control Unit Address of SCSI Device
 |  |  Connector ID
 |  Slot or Adapter Number
 Bus Type
```

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.

Adapters and cards are identified with only AB-CD. The possible values for AB are as follows:

```
 00   for processor bus
 01   for ISA buses
 04   for PCI buses
 05   for PCMCIA buses (not supported on 7024)
```

The possible values for CD depend on the adapter or card.

For pluggable adapters or cards, this is a two-digit slot number in the range from 01 to 99. However, in the case of ISA cards these numbers do not actually correspond to the physical slot numbers. They simply are based on the order in which the ISA cards are defined or configured, either by SMIT or the ISA Adapter Configuration Service Aid.

For integrated adapters, the first character (C) is a letter in the range from A to Z. This letter is based on the order in which the integrated adapters are defined in residual data. This ensures unique location codes for the integrated adapters. The second character (D) is set to 0.

Refer to the following examples:

RSPC Location Code Examples

```
Processor-PCI bus
 00-00       PCI bus
Memory module in system planar
 00-00-00-01
Memory module in card
 00-0A-00-01
Integrated PCI adapters
 04-A0 ISA bus (Integrated PCI-ISA bridge)
 04-B0 Secondary PCI bus (Integrated PCI-PCI bridge)
 04-C0 Integrated PCI SCSI controller
Non-integrated PCI adapters
 04-01 Any PCI card in slot 1
 04-02 Any PCI card in slot 2
Integrated ISA adapters
 01-A0 Diskette adapter
 01-B0 Parallel port adapter
 01-C0 Serial port 1 adapter
 01-D0 Serial port 2 adapter
 01-E0 Keyboard adapter
 01-F0 Mouse adapter
Non-integrated ISA adapters
 01-01 First ISA card defined/configured
 01-02 Second ISA card defined/configured
 01-03 Third ISA card defined/configured
 01-04 Fourth ISA card defined/configured
Device attached to SCSI controller
 04-C0-01-4,0 Device attached to Integrated PCI SCSI controller
```

Location Codes for CHRP Model Architecture System Units

Note: You need to know which system architecture the system unit on which you are working uses. If you are working with a RSPC model use the “Location Codes for RSPC Model Architecture System Units” on page 206. If you do not know which model you have, refer to “Determining System Architecture” on page 143 before proceeding.

The (CHRP) system unit uses Physical Location Codes in conjunction with AIX Location Codes to provide mapping of the failing field replaceable units. The location codes are produced by the system unit's firmware and the AIX operating system.

Physical Location Codes

Note: Diagnostic Versions 5.2.0 and later display physical location codes for all resources. Diagnostic versions earlier than 5.2.0 show a mixture of physical location codes and AIX location codes.

As an example, under diagnostics version 5.2.0 might display a resource as:

```
ent0            P2/E1    IBM 10/100  Mbps Ethernet PCI adapter
```

The P2/E1 is the physical location code indicating an Ethernet port built into the P2 planar.

whereas, in versions prior to 5.2.0, the resource might be shown as:

```
 ent0            10-60    IBM 10/100  Mbps Ethernet PCI adapter
```

The 10-60 is an AIX location code indicating a PCI parent bus of 10, and a devfunc number of 60 (for more information , see "AIX Location Codes" on page 211).

These physical location codes can appear in many places while running diagnostics; for instance, within resource menus, SRNs, or specific service aids.

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 (.). The base location is all of the information before the slash (/) or pound sign (#). It identifies a device that is connected or plugged into the parent. Extended location information follows the slash (/). It identifies a device that is part of the parent, a connector, or a cable. Cable information follows the pound sign (#). It identifies a cable that is connected to the parent. The following are examples:

- P1 identifies system planar P1.
- U1-P1 also identifies system planar P1 in a rack or drawer unit.
- P2 identifies an I/O planar (including all integrated I/O devices).
- P1-C1 identifies a CPU card C1 plugged into planar P1.
- P1-M2 identifies a memory card or SIMM M2 plugged into planar P1.
- P2/K1 identifies a keyboard port controller (with connector) connected to planar P2.
- P1-K1 identifies a keyboard attached to connector K1 on planar P1.
- P1/S1 identifies serial port 1 controller on planar P1, the connector for serial port 1, or the cable attached to connector S1.
- P1-I2/E3 identifies; Ethernet controller 3 on the card plugged into slot 2 (I2) on planar 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 plugged into slot 2 (I2) on planar P1.

The period (.) is used to identify sub-locations such as memory DIMMs on a base memory card or a specific SCSI address. The following are examples:

- P1-M1.4 identifies DIMM 4 on memory card 1 on planar 1.
- U1-P1-M2.12 identifies DIMM 12 on memory card in slot 2 on the system planar.
- P1-C1.1 identifies CPU 1 on CPU card 1 on planar 1.

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

Depending on the AIX and firmware levels, AIX Diagnostics may include extended location information when identifying a planar 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 display without a description identifying the devices, always identify the cable attached to the port.

Physical Location Code Standard Prefixes

Table 1 lists the assigned values for the location type prefixes. In most cases, the prefix value assignments were chosen to provide some mnemonic characteristic, so that they would be easier to remember. The underlined characters in the description field are intended to illustrate this mnemonic relationship.

Table 1. Location Code Prefix Values

Description	Prefix Value (n=instance #)
Rack or drawer unit	Un
Drawer unit mounted in a rack	Un.n (U0.n if rack cannot be sensed by firmware)
Single enclosure platform	(No enclosure location code)
Planar (backplane, system, I/O)	Pn
Planar riser card, extender	Pn.n
Power/voltage supply, voltage regulator, backup battery	Vn
Fan/sensor	Fn
LED/LCD operator panel or Logical device address n relative to adapter port	Ln
CPU/cache card (or pluggable module if on planar)	Cn
CPU/cache module on CPU card (if pluggable)	Cn.n
Memory card or SIMM/DIMM on planar	Mn
Memory SIMM/DIMM on memory card	Mn.n
Other extra-function base system cards (for example, service processor)	Xn
I/O adapter	In
Pluggable modules or daughter cards on I/O adapter	In.n
Device in Bay n	Dn
Ports/Connectors:	
Graphics/video connector	Gn
Keyboard/keyboard connector	Kn
Mouse/mouse connector	On
Serial port	Sn
Parallel port	Rn
Ethernet connector	En
Token Ring connector	Tn
SCSI (pronounced scuzzy) connector	Zn
Other I/O ports or connectors	Qn

Table 1. Location Code Prefix Values (continued)

Description	Prefix Value (n=instance #)
SCSI device addresses (including SSA (Serial Storage Architecture))	
Primary address (SCSI control unit ID)	An
Primary and secondary address (SCSI ID and LUN (Logical Unit Number))	An.n
SCSI device location in SCSI Enclosure Services (SES)	
SCSI bank	Bn
SCSI bank and bay	Bn.n
Undefined prefixes (reserved)	H, J, N, Y
Unique device address, this address remains constant independent of which port the device is attached to.	Wn

AIX Location Codes

Note: AIX logical location codes may still seen and supported under various AIX commands and functions. However, the Diagnostic screens and menus display physical location codes for resources when running versions 5.2.0 and later. For systems with 5.2.0 or later, refer to “Physical Location Codes” on page 208.

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
  ```

For planars, 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 AB are:

00	Processor bus
01	ISA bus
02	EISA bus
03	MCA bus
04	PCI bus used in the case where the PCI bus cannot be identified
05	PCMCIA buses
xy	For PCI adapters where x is equal to or greater than 1. The x and y are characters in the range of 0-9, A-H, J-N, P-Z (O, I, and lower case are omitted) and are equal to the parent bus’s ibm, aix-loc Open Firmware Property.

The possible values for CD depend on the adapter or card are as follows:

- 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). This allows the location code to uniquely identify multiple adapters on individual PCI cards.

  For pluggable ISA adapters, CD is equal to the order in which the ISA cards defined or configured, either by SMIT or the ISA Adapter Configuration Service Aid.

  For integrated ISA adapters, CD is equal to a unique code identifying the ISA adapter. In most cases, this is equal to the adapter's physical location code. In cases where a physical location code is not available, CD is FF.
- EF is the connector ID. It is used to identify a connector on the adapter to which a resource is attached.
- GH is used to identify a port, device, or FRU. For example:
  - For async devices, GH defines the port on the fanout box. The values are 00 to 15.
  - For a diskette drive, H defines either diskette drive 1 or 2. G is always 0.
  - For all other devices, GH is equal to 00.

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

For SCSI devices, the location code is defined as:

```
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.

There is also a bus location code that is generated as '00-xxxxxxxx' where xxxxxxxx is equivalent to the node's unit address. Refer to the system unit service guide for additional information.

Chapter 30. Using the SRN List

The service request number (SRN) list is in numerical sequence.

The SRNs listed in the following chapters are for all systems and devices for which this version of the diagnostic programs can produce an SRN. Use the table “Service Request Number Lists” on page 214 to select the correct chapter for your SRN.

The columns in the table are defined as follows:

Service Request Number

Usually a six-digit number (9333 uses four digits) representing a specific failure of a specific function.

Source of SRN (SRN Src.)

SRN source codes identify the program or procedure that produced the SRN:

A The SRN is from a steady number in the operator panel display.

B The SRN is from a MAP callout.

C The SRN was due to a missing resource at configuration time.

D The SRN is from a diagnostic test after complete isolation testing.

E The SRN is from a POST failure.

F The SRN is from a diagnostic test after partial isolation testing.

G The SRN is from the Error Log Analysis program.

H The SRN is from a diagnostic message after an 888 sequence.

J The SRN is from built-in ROM diagnostics.

K The SRN is from off-line diagnostics.

Failing Function Codes

These numbers represent functional areas of the system unit. The “Failing Function Code List” on page 420 identifies the FRU that contains this function for each specific system unit.

Description and Action

This column lists a brief description of the failure that this SRN represents. It also contains instructions as to what to do to continue the problem analysis.

Note: If you are servicing an SP system, *do not* do the Action listed. Instead, always return to the *SP System Service Guide*.

If you are servicing a cluster, *do not* do the Action listed. Instead, always return to the *Clustered Installation and Service Guide*.

Using the Service Request Number List

The service request number list is in numerical sequence by the SRN. Use the list as follows:

1. Find your SRN in the table.
2. Record the code letter for the Source of SRN (the SRN Src. column).
3. Record the failing function codes in the order listed.

4. Perform the action shown in the Description and Action column.

   Notes:

   a. If you cannot find SRN information in the ″Service Request Number List,″ check for the existence of supplemental material supporting the device for which the SRN was generated.

   b. x in an SRN represents any digit or character.

   c. If your SRN is not listed, check to see if xxx or xxxx has been used. The -xxx or -xxxx should always be the last SRN identified within a specific prefix. An example would be 950-xxxx. The xxxx is the last digit within the 950 prefix.

   d. If you are servicing a SP system, *do not* do the Action listed. Instead, always return to the *SP Hardware Manual*.

   e. If you are servicing a cluster, *do not* do the Action listed. Instead, always return to the *Clustered Installation and Service Guide*.

5. When replacing a FRU, use Chapter 23, “MAP 0410: Repair Checkout”, on page 109 to verify the fix.

Service Request Number Lists

The following five chapters contain the Service Request Number (SRN) Lists. The chapters are divided into number ranges.

Note: There may be 7 or 8 digit SRNs within each range. If the SRN contains 3 digits before the dash, then select the chapter that contains the first 3 digits, followed by the dash, of the SRN you wish to locate. For example, if the SRN is 802-xxxx, you would go to Chapter 34, “SRNs 700-102 through 89c-302”, because this SRN falls between the number range of 700-102 and 89c-302. However, if your SRN contains 4 digits before the dash, then select the chapter that contains the first 4 digits, followed by the dash, of the SRN you wish to locate. For example, if the SRN is 2570–603, you would go to Chapter 37, “SRNs 2520-101 through 25D0-(x)xxx”, because this SRN falls between the number range of 2520-(x)xxx and 2590-(x)xxx.

The following table identifies each SRN chapter range and the page number on which it begins:

Chapter Title	Page Number
Chapter 31, “Five-Digit SRNs 10104 through SSA03”	215
Chapter 33, “SRNs 101-000 through 6C9-600”	227
Chapter 34, “SRNs 700-102 through 89c-302”	285
Chapter 35, “SRNs 900-001 through xxxxxxx”	343
Chapter 36, “SRNs A00-(x)xxx through A1D-(x)xxx”	393
Chapter 37, “SRNs 2520-101 through 25D0-(x)xxx”	409

Chapter 31. Five-Digit SRNs 10104 through SSA03

Service Request Number List

Replace FRU parts in the order by which the ″Failing Function Codes″ are listed.

Abbreviation in Table	Definition
PAA	**P** Adapter port number **AA** SSA Address

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
10104			Description: Format in progress. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
10112			Description: Format Degraded. A format operation ended before it completed. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
1xxxx			Description: Disk drive module error. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive. **Note**: In this SRN, an x represents a digit 0 through F.
20PAA			Description: An open SSA loop was detected. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
21PAA to 29PAA			Description: An SSA Threshold Exceeded link error was detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
2A002			Description: Async code 02 was received. Probably, a software error occurred. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
2A003			Description: Async code 03 was received. Probably, a software error occurred. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
2A004			Description: Async code 04 was received. Probably, a software error occurred. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
2A005			Description: Async code 05 was received. This code indicates that a disk drive module detected the loss of redundant power or cooling. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
2A006			Description: Async code 06 was received. This code indicates that a disk drive module detected the loss of redundant power or cooling. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2A106			Description: Async code 06 was received. This code indicates that multiple disk drive modules detected loss of redundant power or cooling. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
2A206			Description: A disk drive module detected that one of its SSA links failed the POST. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
2FFFF			Description: An async code that is not valid was received. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
300C0			Description: A disk drive module detected the loss of redundant power or cooling. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
301C0			Description: Multiple disk drive modules detected the loss of redundant power or cooling. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
303FE			Description: A disk drive Microcode Error was detected. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
303FF			Description: An SCSI status that is not valid was received. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and the *User's Guide and Maintenance Information* for the SSA adapter.
31000			Description: The disk drive was reset by the adapter. The disk drive might be going to fail. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
33PAA			Description: Excessive link reconfigurations were detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
40000			Description: The SSA adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
40004			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
40008			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
40016			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
40032			Description: A module on the adapter failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
40064			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
40128			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
41004			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
41008			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
41016			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
41032			Description: A module on the adapter failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
41064			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
41128			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42000			Description: A module on the adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42200			Description: Other adapters on the SSA loop are using levels of microcode that are not compatible. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42500			Description: An SSA adapter detected a failure in its fast-write cache. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42510			Description: Not enough DRAM available to run an SSA fast-write cache. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42515			Description: An SSA adapter is attempting to use its fast-write cache, but a fast-write cache card is not installed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42520			Description: An SSA fast-write cache failure was detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42521			Description: An SSA fast-write cache option card failure was detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42522			Description: An SSA fast-write cache option card failure was detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42523			Description: A incorrect version number was detected in the fast-write cache option card. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
42524			Description: A fast-write disk drive (or drives) contains unsynchronized data, but the fast-write cache option card cannot be detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42525			Description: A fast-write problem occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42526			Description: This adapter does not support the SSA Fast-Write Cache Option. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42527			Description: A dormant SSA fast-write cache entry exists. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42528			Description: A fast-write SSA disk drive has been detected that was previously unsynchronized, but has since been configured on a different adapter. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42529			Description: The fast-write cache is disabled. The battery is charging. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
4252A			Description: The supply voltage to the fast-write cache option card is low. The card has switched to Self-Refresh mode. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
4252B			Description: The battery to the fast-write cache option card no longer has the power to maintain data. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
4252C			Description: The battery to the fast-write cache option card needs to be exchanged for a new one. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
42540			Description: Two-way fast-write cache is configured to operate only when both caches are available. One cache, however, is not available. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
43PAA			Description: An SSA device on the loop is preventing the completion of the loop configuration. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive or to the *User's Guide and Maintenance Information* for the SSA adapter.
44PAA			Description: A disk drive module has a Failed status. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive or to the *User's Guide and Maintenance Information* for the SSA adapter.
45PAA			Description: The SSA adapter has detected an open SSA loop. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive or to the *User's Guide and Maintenance Information* for the SSA adapter.
46000			Description: A RAID array is in the Off-Line state because more than one disk drive is not available. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
46500			Description: A member disk drive is missing from a SSA array or the original SSA adapter is not available. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
47000			Description: An attempt was made to store in the SSA adapter the details of more than 32 RAID arrays. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
47500			Description: Part of the RAID array data might have been lost. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48000			Description: The SSA adapter detected a link configuration that is not valid. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48500			Description: The array filter detected a link configuration that is not valid. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48600			Description: One member disk drive of an array is not on the SSA loop that contains the other member disk drives of the array. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48700			Description: Two or more member disk drives of an SSA array are on different loops. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48750			Description: An array is in the Off-Line state because the primary or secondary half of the array is not present. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48755			Description: The SSA adapter is unknown to the array. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48760			Description: An array is in the Off-Line state because the split/join procedure was not performed correctly. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48800			Description: The Invalid-Strip table is full. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48900			Description: An SSA array is not available; a multiple-device error occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
48950			Description: A disk drive caused an Array-Build operation to fail. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49000			Description: A RAID array is in the Degraded state. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
49100			Description: A RAID array is in the Exposed state. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49500			Description: No hot-spare disk drives are available for an array that is configured for hot-spare disk drives. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49510			Description: Hot-spare configuration is not synchronized. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49520			Description: Hot-spare tuning has been lost. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49530			Description: The number of disk drives that remain in a hot-spare pool is less than the specified number. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49540			Description: Adapters that do not support hot-spare pools were detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49700			Description: The parity for the RAID array is not complete. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
49800			Description: A different adapter was detected on each loop. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
4A100			Description: The adapter cannot initialize an SSA disk drive. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
4BPAA			Description: An SSA disk drive at PAA cannot be configured, because its UID cannot be read. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50000			Description: The SSA adapter failed to respond to the device driver. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50001			Description: A Data Parity error occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50002			Description: An SSA adapter DMA error occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50004			Description: A Channel Check occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50005			Description: A software error occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50006			Description: A Channel Check occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
50007			Description: The IOCC detected an internal error. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50008			Description: Unable to read or write the POS registers or PCI configuration space. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50010			Description: An SSA adapter or device-driver protocol error occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50012			Description: The SSA adapter microcode hung. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50013			Description: The SSA adapter card failed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50100			Description: An attempt was made to log an error against a `pdisk` that is not available to the using system. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50200			Description: Duplicate SSA cluster number detected. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50411			Description: SSA adapter detected a SS_SIC_CLASS1 error. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50422			Description: SSA adapter detected a SS_TIMEOUT error. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
50425			Description: SSA adapter detected a SS_LINK_CONFIG_FAILED error. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
504xx			Description: The SSA adapter microcode hung. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
60000			Description: The SSA adapter is missing from the expected configuration. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
60200			Description: The SSA unit cannot be turned on. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter or if the system service guide contains integrated SSA (without a distinct model type from the system unit itself), use the SRN table in the system unit's service guide to find this SRN and do the action indicated there.
60210			Description: A disk drive module has its Check light On. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter or if the system service guide contains integrated SSA (without a distinct model type from the system unit itself), use the SRN table in the system unit's service guide to find this SRN and do the action indicated there.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
60220			Description: A fan-and-power-supply assembly has its Check light On. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter or if the system service guide contains integrated SSA (without a distinct model type from the system unit itself), use the SRN table in the system unit's service guide to find this SRN and do the action indicated there.
60230			Description: The SSA unit has an unexpected Check light On. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter or if the system service guide contains integrated SSA (without a distinct model type from the system unit itself), use the SRN table in the system unit's service guide to find this SRN and do the action indicated there.
60240			Description: An SSA configuration problem occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter or if the system service guide contains integrated SSA (without a distinct model type from the system unit itself), use the SRN table in the system unit's service guide to find this SRN and do the action indicated there.
7xxxx			Description: An SSA disk drive is missing from the expected configuration of the SSA loop. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and to the *User's Guide and Maintenance Information* for the SSA adapter. **Note:** In this SRN, an x represents a digit 0 through F.
8xxxx			Description: A Configuration Error occurred. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive. **Note:** In this SRN, an x represents a digit 0 through F.
D0000			Description: The using system cannot configure the disk drive module. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0100			Description: Unable to clear a disk drive module reservation. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0101			Description: The disk drive module has been reserved since the diagnostics started. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0200			Description: The disk drive module timed out while the diagnostics were running. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0300			Description: The disk drive module failed the diagnostic test. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0400			Description: The disk drive module is Not Ready while the diagnostics are running. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0450			Description: The Format operation that was started on this disk drive module has not finished. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.
D0460			Description: A Format operation was degraded. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
D4000			Description: The diagnostics cannot configure the SSA adapter. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
D4100			Description: The diagnostics cannot open the SSA adapter. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
D4300			Description: The diagnostics have detected an SSA adapter POST failure. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
D44xx			Description: The diagnostics detected that the SSA adapter has corrupted microcode, but cannot download a new version of the microcode. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter. **Note:** In this SRN, an X represents a digit 0 through F.
D6PAA			Description: A high-speed SSA link is running at low speed. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
DFFFF			**Note:** The description and action for this SRN are valid only if you ran the diagnostics on the SSA attachment. Description: A command or parameter that was sent or received is not valid. Action: Refer to the SRN table in the *Service Guide* for the unit containing the disk drive and to the *User's Guide and Maintenance Information* for the SSA adapter.
SSA01			Description: There is not enough using-system memory available for this service aid to continue. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
SSA02			Description: An unknown error occurred. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.
SSA03			Description: The service aid was unable to open a `hdisk`. Action: Refer to the SRN table in the *User's Guide and Maintenance Information* for the SSA adapter.

Chapter 32. SCSI Devices SRNs

Use the following table to replace FRU parts in the order by which the ″Failing Function Codes″ are listed.

Notes:

1. Some SRNs in this chapter may have 4 rather than 3 digits after the dash (-).
2. The *ssss* are the 3 or 4 digit SCSI SRNs before the dash (-).

Note:

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
ssss-102	D	*ssss*	Description: An unrecoverable media error occurred.
ssss-104	D	*ssss*	Description: The motor failed to restart.
ssss-105	D	*ssss*	Description: The drive did not become ready.
ssss-106	D	*ssss*	Description: The electronics card test failed.
ssss-108	D	*ssss*	Description: The bus test failed.
ssss-110	D	*ssss*	Description: The media format is corrupted.
ssss-112	D	*ssss*	Description: The diagnostic test failed.
ssss-114	D	*ssss*	Description: An unrecoverable hardware error.
ssss-116	D		Description: A protocol error. Action: Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
ssss-117	D	*ssss*	Description: A write-protect error occurred.
ssss-118	D	*ssss* B88	Description: A SCSI command time-out occurred.
ssss-120	D	*ssss*	Description: A SCSI busy or command error.
ssss-122	D	*ssss*	Description: A SCSI reservation conflict error.
ssss-124	D	*ssss*	Description: A SCSI check condition error occurred.
ssss-126	D	*ssss* B88	Description: A software error was caused by a hardware failure.
ssss-128	G	*ssss*	Description: The error log analysis indicates a hardware failure.
ssss-129	G	190 *ssss* B88 software	Description: Error log analysis indicates a SCSI bus problem.
ssss-130	G	*ssss*	Description: Error log analysis indicates a problem reported by the disk drive’s self-monitoring function.
ssss-132	D	*ssss*	Description: A disk drive hardware error occurred.
ssss-133	D	*ssss*	Description: Use the Subsystem Service Guide to complete diagnosis.
ssss-134	D	B88 software	Description: The adapter failed to configure.
ssss-135	D	*ssss* B88 software	Description: The device failed to configure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
ssss-136	D	*ssss*	Description: The certify operation failed.
ssss-137	D	*ssss* B88 190	Description: Unit attention condition has occurred on the **Send Diagnostic** command.
ssss-138	D	*ssss*	Description: Error log analysis indicates that the disk drive is operating at a higher than recommended temperature. Action: Check to be sure none of the air passages in the system covers are blocked, that no other system environmental warnings are occurring. Otherwise, go to MAP 210.
ssss-140	G	199 B88 *ssss*	Description: Error log analysis indicates poor signal quality.
ssss-640	G		Description: Error log analysis indicates a path error. Action: Go to Chapter 20, “MAP 0285: Multipath I/O (MPIO) Problem Resolution”, on page 97.

Chapter 33. SRNs 101-000 through 6C9-600

Replace FRU parts in the order by which the ″Failing Function Codes″ are listed.

Note: Some SRNs in this chapter may have 4 rather than 3 digits after the dash (-).

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
101-000	A		Description: The system hung while attempting to configure a device. Action: Use MAP 1540.
101-185	A		Description: A checkstop occurred. Action: Use MAP 1540 in the system unit service guide to isolate the cause.
101-517	A		Description: The system unit failed to IPL. Action: Use MAP 1540.
101-518	A		Description: CD-ROM read problems after boot. **Note:** The boot record was read from the CD-ROM disk. However, errors occurred when trying to mount the CD-ROM file system. This problem can be caused by SCSI device addressing, SCSI terminator, open PTC, SCSI cable, etc. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
101-521 to 101-538	A		Description: The configuration manager detected an error. Action: If you are running the diagnostics from a disk, try running standalone diagnostics. If standalone diagnostics run correctly, the problem may be damaged data on the disk. Contact your software support facility. If a different problem occurs when you run standalone diagnostics, correct that problem. If you were running standalone at first, have the same problem running standalone diagnostics that you had when running diagnostics from disk, or these actions did not resolve the problem, go to MAP 1540, in either the service guide or the installation and service guide for this system unit.
101-544	A		Description: Disk read problems occurred after booting. **Note:** The boot record was read from the disk. However, errors occurred when trying to open the disk drive. This problem can be caused by SCSI device addressing, SCSI terminator, open PTC, SCSI cable, etc. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
101-551 to 101-557	A		Description: The system hung while loading the software. This can be caused by a hardware or software problem. Action: Run the standalone diagnostics. If the standalone diagnostics run correctly, the problem may be a damaged disk data. Consider having the customer contact Software Support before reinstalling the operating system on the disk. Otherwise, go to Chapter 4, “MAP 0020: Problem Determination Procedure”, on page 25. If a different problem occurs when you run the standalone diagnostics, correct that problem. If the standalone diagnostics still produces the same SRN, go to MAP 1540 in either the service guide or the installation and service guide for this system unit.
101-558	A		Description: There is not enough memory to execute diagnostics. Action: There must be a minimum of 16 MB of installed memory. If the system has 16 MB or more of memory installed, suspect a problem with a memory card.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
101-559 to 101-599	A		Description: The system halted while software was loading. This problem may be attributed to either hardware or software. Action: Use the standalone diagnostics if not yet used. If the same SRN is generated from standalone diagnostics, go to MAP 1540 in the system unit service guide for problem isolation.If a different problem occurs when you run the standalone diagnostics, correct that problem. If the SRN is not generated running standalone diagnostics, suspect a problem with the system's software.
101-662	A		Description: An unexpected system interrupt. Action: Go to MAP 1540 in either the service guide or the installation and service guide for this system unit.
101-711 to 101-726	A	xxx	Description: The system hung while trying to configure an unknown resource. Action: Run standalone diagnostics. Start at Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25, Step 14. If you still get the same SRN, refer to "Failing Function Code List" on page 420 and find the FFC that matches the last three digits of the SRN. Suspect the device adapter or device itself. If more than one adapter or device is installed, isolate the failing resource by removing the adapters or devices one at a time and checking if the system stops with the same value in the three-digit display. **Note:** xxx corresponds to the last three digits of the SRN.
101-727	A		Description: The system hung while trying to configure an asynchronous adapter. Action: Use MAP 1540 in the installation and service guide for this system unit. Suspect a problem with one of the async adapters.
101-7C1	A	7C1	Description: The system unit halted while configuring an audio subsystem.
101-80c	A	80c	Description: A potential problem with an SSA device exists. If the system has external SSA devices refer to the *SSA Adapters User's Guide and Maintenance Information*. If the system has internal SSA devices, go to the SSA MAP in either the system unit's service guide or user's guide.
101-840	A		Description: An unexpected system interrupt. Action: Go to MAP 1540 in either the service guide or the installation and service guide for this system unit. Suspect either a SCSI adapter or integrated SCSI if so equipped.
101-888	A	210 227 E10	Description: The system does not IPL.
101-c32	D		Description: The system hung while indicating that a direct-attached display was selected as the console. Action: Go to MAP 1540 in either the service guide or the installation and service guide for this system unit. Suspect the graphics adapter being used for the display console first.
101-c33	D		Description: The system hung while indicating that a TTY terminal is the system console. Action: Go to MAP 1540 in either the service guide or the installation and service guide for this system unit. Suspect the graphics adapter being used for the display console first.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
101-c70	A		Description: A problem was encountered mounting the CD-ROM. Action: Use MAP 1540 in the service guide or the installation and service guide for the system unit.
101-2004	A		Description: Maximum memory size of partition is too large with respect to the current partition memory size. Action: Specify a maximum memory size for the partition no larger than 64 times the starting memory size of the partition.
101-xxxx	A	xxxx E10	Description: The system hung while configuring a resource. The last three or four digits after the dash (-) identify the failing function code for the resource being configured. Action: Use Chapter 17, "MAP 0260: System Hangs During Resource Configuration", on page 85.
103-151	D	151	Description: The time-of-day battery failed.
109-200	B		Description: The system crashed while being run by the customer. Action: Use Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25, and get a new SRN.
110-101	C		Description: The diagnostics did not detect an installed resource. Action: If this SRN appeared when running concurrent diagnostics, then run concurrent using the **diag -a** command, otherwise use Chapter 21, "MAP 0290: Missing Resource Problem Resolution", on page 101.
110-908	D	908 C33 C36	Description: The system halted while diagnostics were executing.
110-921 to 110-926	D	xxx 812	Description: The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN.
110-935	D	935 812	Description: The system halted while diagnostics were executing.
110-946	D	946 221	Description: The system halted while diagnostics were executing.
110-xxxx	D	xxxx 221	Description: The system halted while diagnostics were executing. **Note:** xxxx corresponds to the last three or four digits of the SRN following the dash (-). If your 110 SRN is not listed, substitute the last three or four digits of the SRN for xxxx, then proceed to the FFC table using the substituted digits as your FFC.
111-107	B		Description: A machine check occurred. Action: Go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25.
111-108	B		Description: An encoded SRN was displayed. Action: Go to Chapter 4, "MAP 0020: Problem Determination Procedure", on page 25.
111-121	B		Description: There is a display problem. Action: Do problem determination on the display.
111-259	B		Description: Cannot display readable information on the terminal. Action: Use Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95 Entry 3.
111-725	B	725	Description: Cannot display readable information on the display. **Note:** Suspect the display adapter attached to the console display. Action: Use Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
111-736	B	736 821	Description: The keyboard does not respond. Action: Use Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95 Entry 1.
111-78C	B	PCI adapter 227 E10	Description: I/O bus problem. Action: Use MAP 210. **Note:** PCI adapter refers to the adapters you made note of when using Chapter 10, "MAP 0080: System Bus Problem Isolation", on page 53.
111-82C	B		Description: Cannot display readable information on the display. Action: Go to Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95 Entry 2.
111-921	B	921 821	Description: The keyboard does not respond. Action: Use Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95 Entry 1.
111-922	B	922 821	Description: The keyboard does not respond. Action: Use Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95 Entry 1.
111-923	B	923 821	Description: The keyboard does not respond. Action: Use Chapter 19, "MAP 0280: Boot Problem Resolution", on page 95 Entry 1.
111-947	B	221	Description: System beeper not functioning correctly.
111-999	D	210	Description: System does not perform a soft reset.
199-102	D	199	Description: A critical failure has occurred on an undefined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-103	D	199	Description: A non-critical failure has occurred on an undefined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-104	D	199	Description: An unrecoverable failure has occurred on an undefined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-122	D	199	Description: A critical power supply failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-123	D	199	Description: A non-critical power supply failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-124	D	199	Description: An unrecoverable power supply failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-132	D	199	Description: A critical fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-133	D	199	Description: A non-critical fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-134	D	199	Description: An unrecoverable fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-148	D	199	Description: The enclosure indicates a temperature threshold warning. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-149	D	199	Description: The enclosure indicates a temperature threshold failure. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
199-172	D	199	Description: A critical enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-173	D	199	Description: A non-critical enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-174	D	199	Description: An unrecoverable enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-182	D	199	Description: A critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-183	D	199	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-184	D	199	Description: An unrecoverable failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-192	D	199	Description: A critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-193	D	199	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-194	D	199	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-201	D	199 891	Description: Device configuration error. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-202	D	199 891	Description: The enclosure failed to open. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-203	D	199 891	Description: The enclosure failed to return inquiry data. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-204	D	199	Description: A critical power supply or fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
199-205	D	199	Description: A failure has occurred on a redundant power supply or fan. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2E6-101	D	221	Description: Enhanced error handling failure on the bus.
2E6-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
2E6-103	D	2E6 221	Description: Enhanced error handling failure on the adapter.
2E6-212	D	2E6	Description: FIFO empty bit set.
2E6-213	D	2E6	Description: FIFO empty bit clear.
2E6-214	D	2E6	Description: FIFO full bit set.
2E6-215	D	2E6	Description: FIFO full bit clear.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2E6-216	D	2E6	Description: FIFO data miscompare.
2E6-217	D	2E6	Description: SCSI FIFO data miscompare.
2E6-218	D	2E6	Description: SCSI FIFO underflow.
2E6-219	D		Description: SCSI parity error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-220	D	2E6	Description: SCSI FIFO flags error.
2E6-221	D	2E6 221	Description: Miscompare during the write/read of the configuration register.
2E6-222	D	2E6	Description: Error during the write/read of the memory register.
2E6-223	D	2E6	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-224	D	2E6 221	Description: SCSI configuration register read or write error.
2E6-225	D	2E6	Description: Adapter POST failed.
2E6-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-227	D	2E6 221	Description: SCSI adapter test failure.
2E6-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-242	D		Description: SCSI bus problem. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E6-301	D	2E6 221	Description: The parent device open failed.
2E6-701	G	2E6	Description: Error log analysis indicates a PCI SCSI adapter failure.
2E6-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
2E6-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2E6-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
2E7-101	D	221	Description: Enhanced error handling failure on the bus.
2E7-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
2E7-103	D	2E7 221	Description: Enhanced error handling failure on the adapter.
2E7-212	D	2E7	Description: FIFO empty bit set.
2E7-213	D	2E7	Description: FIFO empty bit clear.
2E7-214	D	2E7	Description: FIFO full bit set.
2E7-215	D	2E7	Description: FIFO full bit clear.
2E7-216	D	2E7	Description: FIFO data miscompare.
2E7-217	D	2E7	Description: SCSI FIFO data miscompare.
2E7-218	D	2E7	Description: SCSI FIFO underflow.
2E7-219	D		Description: SCSI parity error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-220	D	2E7	Description: SCSI FIFO flags error.
2E7-221	D	2E7 221	Description: Miscompare during the write/read of the configuration register.
2E7-222	D	2E7	Description: Error during the write/read of the memory register.
2E7-223	D	2E7	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-224	D	2E7 221	Description: SCSI configuration register read or write error.
2E7-225	D	2E7	Description: Adapter POST failed.
2E7-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-227	D	2E7 221	Description: SCSI adapter test failure.
2E7-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-242	D		Description: SCSI bus problem. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2E7-301	D	2E7	Description: Configuration open failed for parent bus.
2E7-701	G	2E7	Description: Error log analysis indicates a PCI SCSI adapter failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2E7-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
2E7-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
2E7-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
2EF-101	E	751	Description: Post indicates an adapter failure.
440-XXX to 443-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
444-101	D	2C3 444	Description: External wrap test failed on port 0.
444-102	D	2C3 444	Description: External wrap test failed on port 1.
444-103	D	227	Description: Enhanced error handling failure on bus.
444-104	D	227	Description: Enhanced error handling failure on Eads chip.
444-105	D	444	Description: Enhanced error handling failure on adapter.
444-106	D	776 646	Description: Enhanced error handling failure on bus.
444-107	D	776 646	Description: EEH failure on Eads chip.
444-108	D	776 646	Description: Enhanced error handling failure on adapter.
444-201	D	444 227	Description: Internal adapter test failed.
444-202	D	444 227	Description: External wrap test failed on port 0.
444-203	D	444 227	Description: External wrap test failed on port 1.
444-204	D	2C3 444	Description: External wrap test failed on port 0.
444-205	D	2C3 444	Description: External wrap test failed on port 1.
444-206	D	2C3 444 software	Description: External wrap test failed on port 0.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
444-207	D	2C3 444 software	Description: External wrap test failed on port 1.
444-208	D	444 227	Description: Enhanced error handling failure opening the adapter.
444-301	D	444 227 software	Description: Internal adapter test failed.
444-302	D	444 227 software	Description: External wrap test failed on port 0.
444-303	D	444 227 software	Description: External wrap test failed on port 1.
444-304	D	2C3 444 software	Description: External wrap test failed on port 0.
444-305	D	2C3 444 software	Description: External wrap test failed on port 1.
444-700	D	444 software	Description: Error log analysis indicates a hardware problem.
444-701	D	444 227	Description: Error log analysis indicates that this adapter has failed to initialize due to EEH errors.
447-101	D	447	Description: The Fibre Channel Adapter configuration failed.
447-102	D	447	Description: The Reset test failed.
447-103	D	447	Description: The Register test failed.
447-104	D	447	Description: The SRAM test failed.
447-105	D	447	Description: The Internal Wrap test failed.
447-106	D	447	Description: The Gigabaud Link Module (GLM) Wrap Test Failure.
447-107	D	447	Description: The External Wrap test failed.
447-109	D	221	Description: Enhanced Error Handling Failure on EADs chip.
447-110	D	447	Description: Enhanced Error Handling Failure on adapter.
447-201	D	447 221	Description: The Configuration Register test failed.
447-202	D	447 221	Description: The Interrupt test failed.
447-203	D	447 221	Description: The PCI Wrap test failed.
447-204	D	447 221	Description: The DMA test failed.
447-205	D	447 221	Description: I/O error on a read/write operation.
447-701	G	447 221	Description: Error log analysis indicates that an error has occurred with the adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
447-703	G	447	Description: Error log analysis indicates that an unknown adapter error has occurred.
447-704	G	447	Description: Error log analysis indicates that an adapter error has occurred.
451-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
453-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
541-xxx	D	541	Description: A DLT tape device problem has occurred. Action: Refer to the DLT tape device documentation.
542-xxx	D	542	Description: An 8mm 60GB tape device problem has occurred. Action: Refer to the 8mm 60GB tape device documentation.
56B-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
56D-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
57B-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
57D-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
58B-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
58D-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
59B-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
59D-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
60B-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
601-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
612-130	D	612	Description: An 8mm 80GB VXA tape device problem has occurred. Action: Refer to the 8mm 80GB tape device documentation.
613-xxx	D	613	Description: An 8mm 80GB VXA tape device problem has occurred.
61B-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
61D-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
61E-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
621-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
623-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
624-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
62D-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
62E-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
636-101	D	636	Description: EPROM test failure.
636-102	D	636	Description: Adapter SDRAM failure.
636-103	D	636	Description: Adapter checksum failure.
636-104	D	636	Description: Adapter memory test failure.
636-105	D	636	Description: Adapter buffer test failure.
636-106	D	636	Description: Adapter cache test failure.
636-107	D	636	Description: Internal loop-back test failure.
636-108	D	636	Description: External wrap test failure.
636-109	D	221	Description: Enhanced error handling failure on the bus.
636-110	D	221	Description: Enhanced error handling failure on the Eads chip.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
636-111	D	636	Description: Enhanced error handling failure on the adapter.
636-201	D	636 221	Description: Hardware failure opening adapter.
636-202	D	636 221	Description: Interrupt test failure.
636-203	D	636 221	Description: Adapter DMA test failure.
636-204	D	636 221	Description: Enhanced error handling failure opening the adapter.
636-701	G	636	Description: ELA indicates an I/O failure on the adapter.
637-101	D	221	Description: Enhanced error handling failure on the bus.
637-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
637-103	D	637 221	Description: Enhanced error handling failure on the adapter.
637-212	D	637	Description: FIFO empty bit set.
637-213	D	637	Description: FIFO empty bit clear.
637-214	D	637	Description: FIFO full bit set.
637-215	D	637	Description: FIFO full bit clear.
637-216	D	637	Description: FIFO data miscompare.
637-217	D	637	Description: SCSI FIFO data miscompare.
637-218	D	637	Description: SCSI FIFO underflow.
637-219	D		Description: SCSI parity error. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
637-220	D	637	Description: SCSI FIFO flags error.
637-221	D	637 221	Description: Miscompare during the write/read of the configuration register.
637-222	D	637	Description: Error during the write/read of the memory register.
637-223	D	637	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
637-224	D	637 221	Description: SCSI configuration register read or write error.
637-225	D	637	Description: Adapter POST failed.
637-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
637-227	D	637 221	Description: SCSI adapter test failure.
637-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
637-231	D		Description: Function could not complete. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
637-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
637-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
637-242	D		Description: SCSI bus problem. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
637-301	D	637 221	Description: The parent device open failed.
637-701	G	637	Description: Error log analysis indicates a PCI SCSI adapter failure.
637-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
637-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
637-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
638-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
639-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
63A-XXX to 63F-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
640-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
643-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
644-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
646-101	D	D46	Description: External Test Failure.
646-102	D	240	Description: External Test Failure.
646-103	D	646	Description: I/O Test Failure.
646-104	D	646 221	Description: Adapter On-card Test Failure.
646-105	D	646	Description: Wrap Test Failure.
646-106	D	646	Description: Enhanced Error Handling failure on bus.
646-107	D	646	Description: EEH failure on Eads chip.
646-108	D	646	Description: Enhanced Error Handling failure on adapter.
646-201	D	646 221	Description: Configuration Register Test Failure.
646-202	D	646 221	Description: Wrap Test Failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
646-204	F	D46 240	Description: External Test Failure.
646-205	F	D46 646	Description: External Test Failure. Action: Run advanced diagnostics with wrap test for this resource to obtain a correct problem resolution.
646-206	F	240 646	Description: External Test Failure. Action: Run advanced diagnostics with wrap test for this resource to obtain a correct problem resolution.
646-302	F	240 D46 221	Description: External Test Failure. Action: Run advanced diagnostics with wrap test for this resource to obtain a correct problem resolution.
646-303	F	D46 646 221	Description: External Test Failure. Action: Run advanced diagnostics with wrap test for this resource to obtain a correct problem resolution.
646-401	F	240 D46 646 221	Description: External Test Failure. Action: Run advanced diagnostics with wrap test for this resource to obtain a correct problem resolution.
646-701	G	646	Description: Error log analysis indicates that an adapter error has occurred.
646-702	G	646	Description: Error log analysis indicates that an adapter check has occurred.
646-703	G	646 221	Description: Error log analysis indicates that a DMA failure has occurred.
646-704	G	646 221	Description: Error log analysis indicates that a PCI Bus error has occurred.
646-705	G	646 221	Description: Error log analysis indicates that a Programmed I/O error has occurred.
646-706	G	646	Description: ELA indicates a command write failure occurred.
646-707	G	646	Description: ELA indicates an internal adapter error has occurred.
64A-XXX to 64F-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
650-xxx	D	650	Description: Disk drive configuration failed.
651-140	D	165 221	Description: Display Character test failed.
651-150	D	166 2E0	Description: Sensor indicates a fan has failed. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-151	D	152 2E2	Description: Sensor indicates a voltage is outside the normal range. Action: Use MAP 1520.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-152	D	2E1	Description: Sensor indicates an abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-153	D	152 E19	Description: Sensor indicates a power supply has failed. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-159	D		Description: Sensor indicates a FRU has failed. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-160	D	166 2E0	Description: Sensor indicates a fan is turning too slowly. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-161	D	152 2E2	Description: Sensor indicates a voltage is outside the normal range. Action: Use MAP 1520.
651-162	D	2E1	Description: Sensor indicates an abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-163	D	152 E19	Description: Sensor indicates a power supply has failed. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-169	D		Description: Sensor indicates a FRU has failed. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-170	D		Description: Sensor status not available. Action: Contact your support person.
651-171	D		Description: Sensor status not available Action: Contact your support person.
651-600	G		Description: Uncorrectable memory or unsupported memory. Action: Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory module(s).
651-601	G		Description: Missing or bad memory Action: If the installed memory matches the reported memory size, then replace the memory: otherwise, add the missing memory.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
651-602	G	2C5 2C7	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-603	G	2C6 2C7	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-604	G	2C5	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79 to identify the paired module.
651-605	G	2C6	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79 to identify the paired module.
651-608	G	D01	Description: Bad L2 Cache. **Note:** Disregard this SRN if the processor for this cache was manually deconfigured. Refer to the Service Processor menus to determine if the processor was manually deconfigured. If the processor was manually deconfigured and you got this SRN, you need to apply AIX APAR IY01637 (4.2) or IY01606 (4.3). Contact your support center to determine if a newer level of firmware is available for your system.
651-609	G	D01	Description: Missing L2 Cache.
651-610	G	210	Description: CPU internal error.
651-611	G	210	Description: CPU internal cache controller error.
651-612	G	D01	Description: External cache parity or multi-bit ECC error.
651-613	G	D01	Description: External cache ECC single-bit error.
651-614	G	214	Description: System bus time-out error.
651-615	G	292	Description: Time-out error waiting for I/O.
651-619	G		Description: Error log analysis indicates an error detected by the CPU. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-620	G	2C5	Description: ECC correctable error Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-621	G	2C6	Description: ECC correctable error Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-622	G	2C5	Description: Correctable error threshold exceeded Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-623	G	2C6	Description: Correctable error threshold exceeded Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-624	G	214	Description: Memory Control Subsystem internal error.
651-625	G	214	Description: Memory address error (invalid address or access attempt).
651-626	G	214	Description: Memory Data error (Bad data going to memory).
651-627	G	214	Description: System bus time-out error.
651-628	G	210	Description: System bus protocol/transfer error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
651-629	G		Description: Error log analysis indicates an error detected by the memory controller. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-630	G	307	Description: I/O Expansion Bus Parity Error.
651-631	G	307	Description: I/O Expansion Bus Time-out Error.
651-632	G	306 307 308	Description: Internal Device Error.
651-633	G	307 306	Description: I/O Expansion Unit not in an operating state.
651-634	G	307	Description: Internal Device Error.
651-639	G		Description: Error log analysis indicates an error detected by the I/O. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-640	G	2D5	Description: I/O general bus error.
651-641	G	2D6	Description: Secondary I/O general bus error.
651-642	G	2D3	Description: Internal Service Processor memory error.
651-643	G	2D3	Description: Internal Service Processor firmware error.
651-644	G	2D3	Description: Other internal Service Processor hardware error.
651-650	G	E17	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-651	G	E18	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-653	G	301	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-654	G	302	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-655	G	303	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-656	G	304	Description: ECC correctable error. action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-657	G	305	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-658	G	30A	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-659	G	2CD	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-65A	G	2CE	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-65B	G	2CC	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-65C	G	30B	Description: ECC correctable error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
651-660	G	E17	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-661	G	E18	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-663	G	301	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-664	G	302	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-665	G	303	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-666	G	304	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-667	G	305	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-668	G	30A	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-669	G	2CD	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-66A	G	2CE	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-66B	G	2CC	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-66C	G	30B	Description: Correctable error threshold exceeded. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-670	G	E17 2C7	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-671	G	E18 2C7	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-673	G	301	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-674	G	302	Description: Failed memory module. Action: Go to MAP 1240 ″Memory Problem Resolution″ if it exists in the system service guide, otherwise, use Chapter 15, “MAP 0240: Memory Problem Resolution” , on page 79.
651-675	G	303	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-676	G	304	Description: Failed memory module. Action: Go to MAP 1240 ″Memory Problem Resolution″ if it exists in the system service guide, otherwise, use Chapter 15, “MAP 0240: Memory Problem Resolution” , on page 79.
651-677	G	305	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-678	G	30A	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-679	G	2CD	Description: Failed memory module. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-67A	G	2CE	Description: Failed memory module. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-67B	G	2CC	Description: Failed memory module. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-67C	G	30B	Description: Failed memory module. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-680	G	E17	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-681	G	E18	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-683	G	301	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-684	G	302	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-685	G	303	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-686	G	304	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-687	G	305	Description: Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to identify the paired module.
651-688	G	30A	Description: Memory card has no matched pair. Action: The most probable failure is the memory card paired with the memory card identified by the location code. Use the system *Service Guide* to determine how the memory cards are grouped, then use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to replace the paired card.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-689	G	2CD	Description: Memory card has no matched pair. Action: The most probable failure is the memory card paired with the memory card identified by the location code. Use the system *Service Guide* to determine how the memory cards are grouped, then use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to replace the paired card.
651-68A	G	2CE	Description: Memory card has no matched pair. Action: The most probable failure is the memory card paired with the memory card identified by the location code. Use the system *Service Guide* to determine how the memory cards are grouped, then use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79 to replace the paired card.
651-710	G	214 2C4	Description: System bus parity error.
651-711	G	214 210 2C4	Description: System bus parity error.
651-712	G	214 210 210 2C4	Description: System bus parity error.
651-713	G	214 2C4	Description: System bus protocol/transfer error.
651-714	G	214 210 2C4	Description: System bus protocol/transfer error.
651-715	G	214 210 210 2C4	Description: System bus protocol/transfer error.
651-720	G	2C5 2C7 214	Description: Uncorrectable Memory Error Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-721	G	2C6 2C7 214	Description: Uncorrectable Memory Error Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-722	G	210 2C4 214	Description: System bus parity error.
651-723	G	210 2C4 214	Description: System bus protocol/transfer error.
651-724	G	292 2C8 214 763	Description: I/O Host Bridge time-out error.
651-725	G	292 2C8 214 763	Description: I/O Host Bridge address/data parity error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-726	G	Software	Description: I/O Host Bridge timeout caused by software. Action: This error is caused by a software or operating system attempt to access an invalid memory address. Contact software support for assistance.
651-730	G		Description: I/O error on the ISA bus. Action: Refer to the Error Code to FRU Index in the system unit's service guide.
651-731	G	2C8 292 763	Description: Intermediate or System Bus Address Parity Error.
651-732	G	2C8 292 763	Description: Intermediate or System Bus Data Parity Error.
651-733	G	214 2C8 292	Description: Intermediate or System Bus Address Parity Error.
651-734	G	214 2C8 292	Description: Intermediate or System Bus Data Parity Error.
651-735	G	2D2 292	Description: Intermediate or System Bus Time-out Error.
651-736	G	2D2 292 214	Description: Intermediate or System Bus Time-out Error.
651-740	G	2D3 2D4	**Note:** Ensure that the system IPLROS and Service Processor are at the latest firmware level before removing any parts from the system. Description: Time-out on communication response from Service Processor
651-741	G	2D3 2D4	Description: Service Processor error accessing special registers.
651-742	G	2D3 2D4	Description: Service Processor reports unknown communication error.
651-743	G	2D7 2D5	Description: Service Processor error accessing Vital Product Data EEPROM.
651-744	G	165 2D5 2D3	Description: Service Processor error accessing Operator Panel.
651-745	G	2D9 2D5	Description: Service Processor error accessing Power Controller.
651-746	G	2E0 2D4	Description: Service Processor error accessing Fan Sensor.
651-747	G	2E1 2D5	Description: Service Processor error accessing Thermal Sensor.
651-748	G	2E2 2D5	Description: Service Processor error accessing Voltage Sensor.
651-749	G	2E3 2D4	Description: Service Processor error accessing Serial Port.
651-750	G	814 2D4	Description: Service Processor detected NVRAM error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
651-751	G	817 2D4	Description: Service Processor error accessing Real-Time Clock/Time-of-Day Clock.
651-752	G	2E4 2D4	Description: Service Processor error accessing JTAG/COP controller/hardware.
651-753	G	151 2D4	Description: Service Processor detects loss of voltage from the Time-of-Day Clock backup battery.
651-754	G		Description: Power Control Network general connection failure. Action: If a location code is present, check the cable connections at that location. If there is no location code, check all the power distribution cable connections starting at the processor drawer then through each I/O drawer.
651-760	G	software hardware	Description: Service Processor detected a surveillance time-out. Action: A surveillance time-out is caused by lack of response from the operating system. The most likely cause is a software or operating system failure. Verify that the problem is not related to hardware by running diagnostics, in Problem Determination Mode, on all resources which have not already been run. Also, the system administrator should look for other symptoms that would indicate a software or operating system problem. Contact the software support structure for assistance in needed.
651-770	G	2C8 292 306	Description: Intermediate or System Bus Address Parity Error.
651-771	G	2C8 292 306	Description: Intermediate or System Bus Data Parity Error.
651-772	G	2D2 292 306	Description: Intermediate or System Bus Time-out Error.
651-773	G	227	Description: Intermediate or System Bus Data Parity Error.
651-780	G	E17 2C7 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-781	G	E18 2C7 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-783	G	301 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-784	G	302 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-785	G	303 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-786	G	304 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-787	G	305 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
651-788	G	30A 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-789	G	2CD 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-78A	G	2CE 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-78B	G	2CC 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-78C	G	30B 214	Description: Uncorrectable Memory Error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
651-800	G	166 2E0	Description: Fan is turning slower than expected.
651-801	G	166 2E0	Description: Fan stop was detected. Action: Verify the following: • nothing is obstructing the fan rotation • the fan power connection is tight • the fan speed sensing cable is tight If the fan still is not turning replace the fan. If the fan is turning, replace the fan sensor FRU.
651-802	G		Description: Fan failure. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-809	G		Description: Power fault warning due to unspecified cause. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-810	G	152 2E2	Description: Over voltage condition was detected Action: Shut the system down and do the following before replacing any FRUs. 1. Visually inspect the power cables and reseat the connectors. 2. Run the following command `diag -Avd sysplanar0`. When the Resource Repair Action menu displays, select `sysplanar0`.
651-811	G	152 2E2	Description: Under voltage condition was detected Action: Shut the system down and do the following before replacing any FRUs. 1. Visually inspect the power cables and reseat the connectors. 2. Run the following command `diag -Avd sysplanar0`. When the Resource Repair Action menu displays, select `sysplanar0`.
651-812	G	152	Description: System shutdown due to: 1. Loss of AC power 2. Power button was pushed without proper system shutdown 3. Power supply failure. Action: If reasons 1 and 2 can be excludes, then replace the power supply FRU.
651-813	G		Description: System shutdown due to loss of AC Power to the site. Action: System resumed normal operation, no action required.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-814	G	152	Description: CEC Rack shutdown due to one of the following: 1. Loss of AC power to the CEC Rack 2. Open or disconnected SPCN cable between racks 3. AC module, Bulk power, regulator or SPCN card failure. Action: If 1 and 2 can be excluded and the problem can be re-created, try the power supply related FRUs one at a time to isolate the problem.
651-815	G	287 289	Description: I/O Rack shutdown due to one of the following: 1. Loss of AC power to the I/O Rack 2. Open or disconnected SPCN cable between racks 3. Power supply failure. Action: If 1 and 2 can be excluded, then replace the power supply FRU.
651-816	G	287	Description: Power fault due to internal power supply failure.
651-817	G	289	Description: Power fault due to internal power supply failure.
651-818	G		Description: Power fault due to manual activation of power-off request. Action: Resume normal operation.
651-819	G	152	Description: Power fault due to internal power supply failure.
651-820	G	2E1	Description: An over temperature condition was detected Action: Verify the following: • the room ambient temperature is within the system operating environment • there is unrestricted air flow around the system • all system covers are closed If all conditions are met, then replace the temperature sensor FRU.
651-821	G	2E1	Description: System shutdown due to an over maximum temperature condition being reached. Action: Verify the following: • The room ambient temperature is within the system operating environment. • There is unrestricted air flow around the system. • All system covers are closed. If all conditions are met, then replace the temperature sensor FRU.
651-822	G	166 2E1	Description: System shutdown due to over temperature condition and fan failure. Use the physical FRU location(s) as the probable cause(s). Action: Use the physical location codes to replace the FRUs that are identified on the diagnostics problem report screen.
651-823	G		Description: System shutdown due to fan failure. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-824	G		Description: System shutdown due to power fault warning with an unspecified cause. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs. If no physical location codes are reported, the shutdown was caused by using the power off button or there was a loss of power to the system.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
651-830	G	166 2E0	Description: Sensor detected a fan failure. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-831	G	152 2E2	Description: Sensor detected a voltage outside of the normal range. Action: Use MAP 1520.
651-832	G	2E1	Description: Sensor detected an abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-833	G	152 E19	Description: Sensor detected a power supply failure. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-839	G		Description: Sensor detected a FRU that has failed. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-840	G	166 2E0	Description: Sensor detected a fan failure. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-841	G	152 2E2	Description: Sensor detected a voltage outside of the normal range. Action: Use MAP 1520.
651-842	G	2E1	Description: Sensor detected an abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-843	G	152 E19	Description: Sensor detected a power supply failure. Action: Use Chapter 12, "MAP 0220: Hot-Swap FRU Problem Resolution", on page 63.
651-849	G		Description: Sensor detected a FRU that has failed. Action: Use MAP 210. Instead of failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
651-88x	G		Description: The CEC or SPCN reported an error. Action: Refer to the entry MAP in this system unit's system service guide, with the 8 digit error and location codes, for the necessary repair action. If the 8 digit error and location codes were NOT reported, then run Advanced Diagnostics in Problem Determination mode and record and report the 8 digit error and location codes for this SRN.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
651-89x	G		Description: The CEC or SPCN reported an error. Action: Refer to the entry MAP in this system unit’s system service guide, with the 8 digit error and location codes, for the necessary repair action. If the 8 digit error and location codes were NOT reported, then run Advanced Diagnostics in Problem Determination mode and record and report the 8 digit error and location codes for this SRN.
651-90x	G		Description: Platform specific error Action: Call your support center.
652-600	G		Description: A non-critical error has been detected: Uncorrectable memory or unsupported memory. Action: Schedule deferred maintenance. Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory module(s).
652-610	G	210	Description: A non-critical error has been detected: CPU internal error. Action: Schedule deferred maintenance. Use MAP 210.
652-611	G	210	Description: A non-critical error has been detected: CPU internal cache or cache controller error. Action: Schedule deferred maintenance. Use MAP 210.
652-612	G	D01	Description: A non-critical error has been detected: External cache parity or multi-bit ECC error. Action: Schedule deferred maintenance. Use MAP 210.
652-613	G	D01	Description: A non-critical error has been detected: External cache ECC single-bit error. Action: Schedule deferred maintenance. Use MAP 210.
652-622	G	2C5	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
652-623	G	2C6	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
652-630	G	307	Description: A non-critical error has been detected: I/O Expansion Bus Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-631	G	307	Description: A non-critical error has been detected: I/O Expansion Bus Time-out Error. Action: Schedule deferred maintenance. Use MAP 210.
652-632	G	306 307 308	Description: A non-critical error has been detected: I/O Expansion Bus Connection Failure. Action: Schedule deferred maintenance. Use MAP 210.
652-633	G	307 306	Description: A non-critical error has been detected: I/O Expansion Unit not in an operating state. Action: Schedule deferred maintenance. Use MAP 210.
652-634	G	307	Description: A non-critical error has been detected: Internal Device Error. Action: Schedule deferred maintenance. Use MAP 210.
652-660	G	E17	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
652-661	G	E18	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
652-663	G	301	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-664	G	302	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-665	G	303	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-666	G	304	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-667	G	305	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-668	G	30A	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-669	G	2CD	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-66A	G	2CE	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-66B	G	2CC	Description: A non-critical error has been detected: Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-66C	G	30B	Description: A non-critical error has been detected. Correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
652-731	G	2C8 292	Description: A non-critical error has been detected: Intermediate or System Bus Address Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-732	G	2C8 292	Description: A non-critical error has been detected: Intermediate or System Bus Data Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-733	G	214 2C8 292	Description: A non-critical error has been detected: Intermediate or System Bus Address Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-734	G	214 2C8 292	Description: A non-critical error has been detected: Intermediate or System Bus Data Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-735	G	2D2 292	Description: A non-critical error has been detected: Intermediate or System Bus Time-out Error. Action: Schedule deferred maintenance. Use MAP 210.
652-736	G	2D2 292 214	Description: A non-critical error has been detected: Intermediate or System Bus Time-out Error. Action: Schedule deferred maintenance. Use MAP 210.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
652-770	G	2C8 292 306	Description: A non-critical error has been detected: Intermediate System Bus Address Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-771	G	2C8 292 306	Description: A non-critical error has been detected: Intermediate or System Bus Data Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-772	G	2D2 292 306	Description: A non-critical error has been detected: Intermediate or System Bus Time-out Error. Action: Schedule deferred maintenance. Use MAP 210.
652-773	G	227	Description: A non-critical error has been detected: Intermediate or System Bus Data Parity Error. Action: Schedule deferred maintenance. Use MAP 210.
652-810	G	152	Description: Non-critical power problem, loss of redundant supply. Use the physical FRU location(s) as the probable cause(s). Action: Schedule maintenance. Use the physical location codes to replace the FRUs that are identified on the diagnostics problem report screen.
652-819	G		Description: Power fault due to internal redundant power supply failure.
652-820	G	166	Description: Non-critical cooling problem, loss of redundant fan. Use the physical FRU location(s) as the probable cause(s). Action: Schedule maintenance. Use the physical location codes to replace the FRUs that are identified on the diagnostics problem report screen.
652-830	G	166 2E0	Description: Sensor detected a redundant fan failure. Action: Use Chapter 12, “MAP 0220: Hot-Swap FRU Problem Resolution”, on page 63.
652-833	G	152 E19	Description: Sensor detected a redundant power supply failure. Action: Use Chapter 12, “MAP 0220: Hot-Swap FRU Problem Resolution”, on page 63.
652-839	G		Description: Sensor detected a redundant FRU failure. Action: Use MAP 210. Instead of failing function codes,use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.
652-88x	G		Description: The CEC or SPCN reported a non-critical error. Action: Schedule deferred maintenance. Refer to the entry MAP in this system unit’s system service guide, with the 8 digit error and location codes, for the necessary repair action. If the 8 digit error and location codes were NOT reported, then run Advanced Diagnostics in Problem Determination mode and record and report the 8 digit error and location codes for this SRN.
652-89x	G		Description: The CEC or SPCN reported a non-critical error. Action: Schedule deferred maintenance. Refer to the entry MAP in this system unit’s system service guide, with the 8 digit error and location codes, for the necessary repair action. If the 8 digit error and location codes were NOT reported, then run Advanced Diagnostics in Problem Determination mode and record and report the 8 digit error and location codes for this SRN.
653-XXX			See Chapter 32, “SCSI Devices SRNs”, on page 225.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
655-001	D	655 221 Monitor/ Cable	Description: Adapter problem.
655-002	D	655 Monitor/ Cable	Description: Display problem.
655-003	D	software 655	Description: Software error.
657-001	D	software 657	Description: Software error.
657-002	D	657 software	Description: Adapter failure.
657-003	D	657 227	Description: Adapter failure.
657-004	D	657 Monitor/ Cable	Description: Display failure.
657-005	D	657 227 Monitor/ Cable	Description: Adapter failure.
65A-XXX to 65F-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
662-101	D	221	Description: Enhanced error handling failure on the bus.
662-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
662-103	D	662 221	Description: Enhanced error handling failure on the adapter.
662-212	D	662	Description: FIFO empty bit set.
662-213	D	662	Description: FIFO empty bit clear.
662-214	D	662	Description: FIFO full bit set.
662-215	D	662	Description: FIFO full bit clear.
662-216	D	662	Description: FIFO data miscompare.
662-217	D	662	Description: SCSI FIFO data miscompare.
662-218	D	662	Description: SCSI FIFO underflow.
662-219	D		Description: SCSI parity error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-220	D	662	Description: SCSI FIFO flags error.
662-221	D	662 221	Description: Miscompare during the write/read of the configuration register.
662-222	D	662	Description: Error during the write/read of the memory register.
662-223	D	662	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
662-224	D	662 221	Description: SCSI configuration register read or write error.
662-225	D	662	Description: Adapter POST failed.
662-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-227	D	662 221	Description: SCSI adapter test failure.
662-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-242	D		Description: SCSI bus problem. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
662-301	D	662 221	Description: The parent device open failed.
662-701	G	662	Description: Error log analysis indicates a PCI SCSI adapter failure.
662-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
662-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
662-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
663-101	D	663 C94 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter Central Processing Unit test failure.
663-102	D	663 C94 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter Timer test failure.
663-103	D	663 C94 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter Bus Interface test failure.
663-104	D	C94 663 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter Dynamic Random Access Memory test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
663-105	D	663 C94 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter Memory Protection test failure.
663-106	D	663 C94 C95	Description: IBM ARTIC960RxD PCI Adapter Debug Port test failure.
663-107	D	C95 66 C97	Description: Interface board wrap test failure.
663-110	D	C94 663 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter Download Diagnostics test failure.
663-123	D	C95 663 C94	Description: Interface board non-wrap test failure.
663-150	D	663 software 227	Description: Device configuration failure.
663-151	D	663 software 227	Description: Device driver indicates a hardware failure.
663-152	D	663	Description: Failure and error in determining which type of IBM ARTIC960RxD PCI Adapter.
663-153	D	663 227 C94 software	Description: Error log analysis indicates a IBM ARTIC960RxD or RxF PCI Adapter failure. Action: Use the **errpt** command to check error log.
663-154	D	C94 663 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter initialization failure.
663-155	D	663 C94 C95	Description: IBM ARTIC960RxD or RxF PCI Adapter initialization failure.
663-156	D	C95 663 C94	Description: IBM ARTIC960RxD or RxF PCI Adapter initialization failure.
663-157	D	C98 C97 C95	Description: Cable wrap test failure.
664-111	D	664 B88	Description: Unable to reserve device.
664-112	D	664 B88	Description: Unable to do configuration.
664-113	D	664 B88	Description: Unable to open the device driver.
664-121	D	664	Description: The CD-ROM drive indicates an error.
664-122	D	664	Description: The CD-ROM drive indicates an error.
664-123	D	664	Description: The CD-ROM drive indicates an error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
664-125	D	664 B88	Description: The CD-ROM drive indicates an error.
664-126	D	664	Description: The CD-ROM drive indicates an error.
664-127	D	664	Description: The CD-ROM drive indicates an error.
664-128	D	664	Description: The CD-ROM drive indicates an error.
664-129	D	664	Description: The CD-ROM drive indicates an error.
664-150	D	Test Disc 664	Description: A media error was detected.
664-151	D	664 B88	Description: A command timeout was detected.
664-152	D	664	Description: A command reservation conflict was detected.
664-162	D	664	Description: The CD-ROM drive indicates an error.
664-171	D	664	Description: Unable to reserve device.
664-172	D	664	Description: Unable to do configuration.
664-173	D	664	Description: Unable to open device driver.
664-175	D	664	Description: The CD-ROM drive indicates an error.
664-198	D	664 B88	Description: Undefined error detected.
664-199	D	664	Description: Undefined error detected.
664-211	D	664	Description: The LED test failed.
664-281	D	664	Description: No tone during audio test.
664-301	G	664	Description: Errors found during ELA.
664-302	G	664 B88	Description: Errors found during ELA.
667-101	D	667 227	Description: The PCI wrap test failed. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-102	D	667	Description: The POST indicates an adapter failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-103	D	667	Description: The POST indicates an adapter channel failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-104	D	190	Description: The POST indicates a defective cable.
667-105	D	B3A	Description: The POST indicates a defective backplane or external enclosure.
667-106	D	722	Description: The POST indicates the last disk drive reconnected caused a channel failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-108	D	221	Description: Enhanced error handling failure on bus.
667-109	D	667	Description: The NVRAM test indicates an adapter failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
667-110	D	722	Description: The disk reported a Predictive Failure Analysis error (PFA). Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-111	D	722	Description: The disk drive has been failed by the adapter. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-112	G	722	Description: ELA indicates that the disk reported a hard data error. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-113	G	722	Description: ELA indicates that the disk reported a hard equipment error. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-114	G	E29	Description: ELA indicates a cache failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-115	G	E30	Description: ELA indicates that the cache battery is either low on power or has failed. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-116	D	667	Description: Failed to disable data scrub. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-117	D	E29	Description: POST indicates cache failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-118	D	E29	Description: NVRAM test indicates cache failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-119	D	E29	Description: NVRAM test indicates that write cache is missing. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-120	D	E29	Description: NVRAM test indicates that cache size is invalid. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-121	D	E30	Description: Adapter test indicates that the cache battery is low on power. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-122	D	E30	Description: Adapter test indicates cache battery failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-123	D	667	Description: ELA indicates an adapter failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
667-124	D	221	Description: Enhanced error handling failure on PCI-PCI Bridge.
667-125	D	667 221	Description: Enhanced error handling failure on adapter.
667-400	F	667 190 B3A 722	Description: POST indicates a channel failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
667-701	G	667 221	Description: Error Log Analysis indicates an EEH error.
669-101	D	221	Description: Enhanced error handling failure on bus.
669-102	D	221	Description: Enhanced error handling failure on Eads chip.
669-103	D	669	Description: Enhanced error handling failure on adapter.
669-201	D	669 221	Description: Configuration register test failure. Action: Before going to MAP 210, look at the label on the adapter. If the label is A-A, use SRN 66C-201 instead.
669-202	D	669	Description: I/O register test failure.
669-203	D	669	Description: Adapter memory test failure.
669-204	D	669	Description: Adapter initialization test failure.
669-205	D	669	Description: Internal loopback test failure.
669-206	D	669	Description: External wrap test failure (1000 Mbps).
669-701	G	669	Description: Error Log Analysis indicates that this device failed to initialize because it is not the IBM version of this adapter. AIX operating system cannot configure this non-IBM version of the adapter.
669-702	G	669	Description: Error Log Analysis indicates that this device failed to initialize due to a problem with the EEPROM on the adapter.
669-703	G	669	Description: Error Log Analysis indicates that this device has failed to initialize due to a self-test failure.
669-704	G	669	Description: Error Log Analysis indicates that this device has failed to initialize due to firmware download error.
66C-101	D	221	Description: Enhanced error handling failure on bus.
66C-102	D	221	Description: Enhanced error handling failure on Eads chip.
66C-103	D	66C	Description: Enhanced error handling failure on adapter.
66C-201	D	66C 221	Description: Configuration register test failure.
66C-202	D	66C	Description: I/O register test failure.
66C-203	D	66C	Description: Adapter memory test failure.
66C-204	D	66C	Description: Adapter initialization test failure.
66C-205	D	66C	Description: Internal loopback test failure.
66C-206	D	66C	Description: External wrap test failure (1000 Mbps).
66C-207	D	66C	Description: External wrap test failure (10 Mbps).
66C-208	D	66C	Description: External wrap test failure (100 Mbps).
66C-702	G	66C	Description: Error Log Analysis indicates that this device failed to initialize due to a problem with the EEPROM on the adapter.
66C-703	G	66C	Description: Error Log Analysis indicates that this device has failed to initialize due to a self-test failure.
66C-704	G	66C	Description: Error Log Analysis indicates that this device has failed to initialize due to firmware download error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
66D-101	D	66D 227	Description: The PCI wrap test failed. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-102	D	66D E2A	Description: The POST indicates an adapter failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-103	D	66D	Description: The POST indicates an adapter channel failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-104	D	190	Description: The POST indicates a defective cable.
66D-105	D	B3A	Description: The POST indicates a defective backplane or external enclosure.
66D-106	D	722	Description: The POST indicates the last disk drive reconnected caused a channel failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-108	D	221	Description: Enhanced error handling failure on bus.
66D-109	D	66D	Description: The test indicates an adapter failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-110	D	722	Description: The disk reported a Predictive Failure Analysis error (PFA). Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-111	D	722	Description: The disk drive has been failed by the adapter. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-112	G	722	Description: ELA indicates that the disk reported a hard data error. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-113	G	722	Description: ELA indicates that the disk reported a hard equipment error. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-114	G	E2A	Description: ELA indicates a cache failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-115	G	E3A	Description: ELA indicates that the cache battery is either low on power or has failed. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-116	D	66D	Description: Failed to disable data scrub. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-117	D	E2A	Description: POST indicates cache failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-118	D	E2A	Description: Adapter test indicates a cache failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-119	D	E2A	Description: Adapter test indicates that write cache is missing. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
66D-120	D	E2A	Description: Adapter test indicates that cache size is invalid. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-121	D	E3A	Description: Adapter test indicates that the cache battery is low on power. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-122	D	E3A	Description: Adapter test indicates cache battery failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-123	D	66D	Description: ELA indicates an adapter failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-124	D	221	Description: Enhanced error handling failure on PCI-PCI Bridge.
66D-125	D	66D 221	Description: Enhanced error handling failure on adapter.
66D-400	F	66D 190 B3A 722	Description: The POST test indicates a channel failure. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.
66D-701	G	66D 221	Description: Error Log Analysis indicates an EEH error.
66E-100	D	66E	Description: Unable to configure the parent device.
66E-102	D	66E	Description: SCSI command **Inquiry** has failed. Unable to get Additional Vital Product Data.
66E-103	D	66E	Description: SCSI command **Reserve** has failed.
66E-104	D	66E	Description: SCSI command **Mode Sense** has failed.
66E-105	D	66E	Description: SCSI command **Mode Select** has failed.
66E-106	D	66E	Description: SCSI command **Allow Media Removal** has failed.
66E-107	D	66E	Description: SCSI command **Prevent Media Removal** has failed.
66E-108	D	66E	Description: SCSI command **Start Stop Unit** has failed.
66E-109	D	66E	Description: SCSI command **Test Unit Ready** has failed.
66E-10A	D	66E	Description: SCSI command **Send Diagnostic** has failed.
66E-10B	D	66E	Description: SCSI command **Release** has failed.
66E-10F	D	66E	Description: Undetermined hardware error has occurred.
66E-200	D	66E B88	Description: Unable to configure the device.
66E-201	D	media 66E	Description: DVD-RAM drive is unable to eject the tray. Action: Verify that no external object prevents the drive from ejecting the tray. Verify that no media is stuck inside the drive. Otherwise, use MAP-0210.
66E-202	D	media 66E	Description: DVD-RAM drive is unable to load the tray. Action: Verify that no external object prevents the drive from loading the tray. Verify that the Test Media is inserted properly in the tray. Otherwise, use MAP-0210.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
66E-203	D	media 66E	Description: DVD-RAM drive is unable to detect the Test Media. Action: Verify that the Test Media is inserted properly. Clean the drive. Run the test with another Test Media. Otherwise , use MAP-0210.
66E-204	D	66E B88	Description: A SCSI reservation conflict has occurred.
66E-205	D	media 66E	Description: The **Random Write/Read/Compare Test** has detected a medium error while testing the DVD-RAM Test Media. Action: Run Diagnostic on this drive with another DVD-RAM Test Media. Use MAP-0210.
66E-206	D	66E media	Description: The **Random Write/Read/Compare Test** has detected a hardware error while testing the DVD-RAM Test Media. Action: Run Diagnostic on this drive with another DVD-RAM Test Media. Use MAP-0210.
66E-207	D	media 66E	Description: The **Random Read Test** has detected a medium error while testing the CD-ROM Test Media. Action: Run Diagnostic on this drive with another CD-ROM Test Media. Use MAP-0210.
66E-208	D	66E media	Description: The **Random Read Test** has detected a hardware error while testing the CD-ROM Test Media. Action: Run Diagnostic on this drive with another CD-ROM Test Media.Use MAP-0210.
66E-209	D	media 66E	Description: DVD-RAM drive is unable to determine the media type. Action: Verify that the proper Test Media is inserted. Clean the drive. Run Diagnostic on this drive with another Test Media. Use MAP-0210.
66E-20A	D	media 66E	Description: DVD-RAM drive has faulty write-protect-detection mechanism. Action: Verify that the DVD-RAM Test Media is not write-protected. Run Diagnostic on this drive with another DVD-RAM Test Media. Use MAP-0210.
66E-20B	D	media 66E	Description: DVD-RAM drive has detected a media error. Action: Verify that the DVD-RAM Test Media is inserted properly. Run Diagnostic on this drive with another DVD-RAM Test Media. If the test fails with the new test media, use MAP-0210 to replace thre defective DVD-ROM drive.
66E-300	D	66E B88 190	Description: SCSI command timeout has occurred.
66E-301	D	B88 190 66E	Description: Description: Unit Attention has occurred.
66E-700	G	66E	Description: ELA indicates an irrecoverable hardware error.
66E-701	G	66E	Description: ELA indicates an undetermined hardware error.
670-XXX to 673-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
674-101	D	674 C94 C95	Description: IBM ARTIC960Rx PCI Adapter Central Processing Unit (CPU) test failure.
674-102	D	674 C94 C95	Description: IBM ARTIC960Rx PCI Adapter Timer test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
674-103	D	674 C94 C95	Description: IBM ARTIC960Rx PCI Adapter Bus Interface test failure.
674-104	D	C94 674 C95	Description: IBM ARTIC960Rx PCI Adapter Dynamic Random Access Memory (DRAM) test failure.
674-105	D	674 C94 C95	Description: IBM ARTIC960Rx PCI Adapter Memory Protection test failure.
674-106	D	674 C94 C95	Description: IBM ARTIC960Rx PCI Adapter Debug Port test failure.
674-107	D	C95 674 C97	Description: Interface board wrap test failure.
674-110	D	C94 674 C95	Description: IBM ARTIC960Rx PCI Adapter Download Diagnostics test failure.
674-123	D	C95 C97	Description: Interface board non-wrap test failure.
674-150	D	674 software 227	Description: Device configuration failure.
674-151	D	674 software 227	Description: Device driver indicates a hardware failure.
674-152	D	674	Description: Failure and error in determining which type of IBM ARTIC960Rx PCI Adapter.
674-153	D	674 227 C94 software	Description: Error log analysis indicates a IBM ARTIC960Rx PCI Adapter failure. Action: Use the **errpt** command to check error log.
674-154	D	C94 674 C95	Description: IBM ARTIC960Rx PCI Adapter initialization failure.
674-155	D	674 C94 C95	Description: IBM ARTIC960Rx PCI Adapter initialization failure.
674-156	D	C95 674 C94	Description: IBM ARTIC960Rx PCI Adapter initialization failure.
674-157	D	C97 C95	Description: Cable wrap test failure.
675-101	D	675 C94 C95	Description: IBM ARTIC960Hx Adapter Central Processing Unit (CPU) test failure.
675-102	D	675 C94 C95	Description: IBM ARTIC960Hx Adapter Timer test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
675-103	D	675 C94 C95	Description: IBM ARTIC960Hx Adapter Bus Interface test failure.
675-104	D	C94 675 C95	Description: IBM ARTIC960Hx Adapter Dynamic Random Access Memory (DRAM) test failure.
675-105	D	675 C94 C95	Description: IBM ARTIC960Hx Adapter Memory Protection test failure.
675-106	D	675 C94 C95	Description: IBM ARTIC960Hx Adapter Debug Port test failure.
675-107	D	C95 675 C97	Description: Interface board wrap test failure.
675-110	D	C94 675 C95	Description: IBM ARTIC960Hx Adapter Download Diagnostics test failure.
675-123	D	C95 675 C94	Description: Interface board non-wrap test failure.
675-150	D	675 software 227	Description: Device configuration failure.
675-151	D	675 software 227	Description: Device driver indicates a hardware failure.
675-152	D	675	Description: Failure and error in determining which type of IBM ARTIC960Hx Adapter.
675-153	D	675 227 C94 software	Description: Error log analysis indicates a IBM ARTIC960Hx Adapter failure. Action: Use the **errpt** command to check error log.
675-154	D	C94 675 C95	Description: IBM ARTIC960Hx Adapter initialization failure.
675-155	D	675 C94 C95	Description: IBM ARTIC960Hx Adapter initialization failure.
675-156	D	C95 675 C94	Description: IBM ARTIC960Hx Adapter initialization failure.
675-157	D	C98 C97 C95	Description: Cable wrap test failure.
677-101	D	677	Description: The Fibre Channel Adapter configuration failed.
677-102	D	677	Description: The Reset test failed.
677-103	D	677	Description: The Register test failed.
677-104	D	677	Description: The SRAM test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
677-105	D	677	Description: The Internal Wrap test failed.
677-106	D	677	Description: The Gigabaud Link Module (GLM) Wrap Test Failure.
677-107	D	677	Description: The External Wrap test failed.
677-109	D	221	Description: Enhanced Error Handling Failure on EADs chip.
677-110	D	677	Description: Enhanced Error Handling Failure on adapter.
677-201	D	677 221	Description: The Configuration Register test failed.
677-202	D	677 221	Description: The Interrupt test failed.
677-203	D	677 221	Description: The PCI Wrap test failed.
677-204	D	677 221	Description: The DMA test failed.
677-205	D	677 221	Description: I/O error on a read/write operation.
677-701	G	677 221	Description: Error log analysis indicates that an error has occurred with the adapter.
677-703	G	677	Description: Error log analysis indicates that an unknown adapter error has occurred.
677-704	G	677	Description: Error log analysis indicates that an adapter error has occured.
678-098	J	678	Description: Tape drive indicates an error.
678-099	J	678 B88	Description: Tape drive not found.
678-101	D	678	Description: Timeout while attempting to communicate with SCSI device.
678-102	D	678	Description: The SCSI device indicates busy.
678-103	D	678	Description: The SCSI device indicates a reservation conflict.
678-104	D	678	Description: The SCSI device indicates a check condition.
678-105	D	678	Description: An error is detected in request sense data.
678-107	D	678	Description: Sense data from the SCSI drive has unexpected data.
678-110	D	678	Description: The **Reserve** command failed.
678-111	D	678	Description: Invalid condition from the drive after a reserve.
678-112	D	678	Description: The write-protect sensor test failed.
678-113	D	678	Description: Invalid condition from drive after a request sense.
678-114	D	678	Description: Timeout while attempting to communicate with the SCSI device.
678-120	D	678	Description: The **Inquiry** command failed.
678-130	D	678 media	Description: The **Load** command failed.
678-134	D	B88 software	Description: The adapter failed to configure.
678-135	D	678 media	Description: The **Unload** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
678-140	D	678	Description: The **Mode Select** command failed.
678-150	D	678 media	Description: The **Test Unit Ready** command failed.
678-160	D	678 media	Description: The **Send Diagnostic** command failed.
678-161	D	678 B88	Description: Invalid condition from the drive after a reserve.
678-163	D	678 B88	Description: Invalid condition from the drive after a request sense.
678-164	D	678 B88	Description: Timeout while attempting to communicate with the SCSI device.
678-165	D	678 B88 276	Description: Write, Read and Compare Test failed.
678-166	D	678 B88 software	Description: Unable to configure the device.
678-167	D	678 B88	Description: An unexpected SCSI error occurred.
678-168	D	B88 software	Description: The adapter failed to configure.
678-169	D	678 media	Description: The **Send Diagnostic** command failed.
678-170	D	678 B88 media	Description: The Read, Write and Compare test failed.
678-180	D	678 media	Description: The **Load** command failed.
678-185	D	678 media	Description: The **Unload** command failed.
678-190	D	678	Description: The **Mode Select** command failed.
678-200	D	678 media	Description: The **Test Unit Ready** command failed.
678-201	G	678 B88	Description: Error diagnosed from error log analysis.
678-210	D	678 B88	Description: The device configuration failed.
678-211	D	678 B88	Description: The device open failed.
678-220	D	678	Description: The **Release** command failed.
678-230	D	678	Description: The **Request Sense** command failed.
678-240	D	678	Description: The **Openx** command failed.
678-260	D	678	Description: The device configuration failed.
678-261	D	678	Description: The device open failed.
678-300	D	678 software	Description: The device configuration failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
678-310	D	B88 678 software	Description: SCSI adapter configuration failed.
678-320	G	678 media	Description: Error log analysis indicates a failure.
678-411 to 678-423	D	678 B88 software	Description: A reservation conflict occurred.
678-511 to 678-523	D	678 B88	Description: The drive returned bad or non-extended sense data.
678-611 to 678-623	D	678 B88 software	Description: An adapter or bus I/O error occurred.
678-711 to 678-723	D	678 B88 software	Description: A device timeout error occurred.
679-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
67B-100	D	67B	Description: POST failed: Catastrophic error detected.
67B-601	G	11A	Description: ELA indicates a low battery warning.
67B-602	G	67B	Description: ELA indicates a mesh violation - tamper.
67B-603	G	67B	Description: ELA indicates the coprocessor is held in a reset condition.
67B-604	G	67B	Description: ELA indicates a +3, +5, or +12 V over-voltage condition.
67B-605	G	67B	Description: ELA indicates an out-of-temperature specification.
67B-606	G	67B	Description: ELA indicates a X-ray or dead battery condition.
67B-607	G	67B	Description: ELA indicates: Intrusion latch..
67E-001	D	67E 221 Monitor/ Cable	Description: Adapter problem.
67E-002	D	67E Monitor/ Cable	Description: Display problem.
67E-003	D	software 67E	Description: Software error.
67E-004	D	67E Monitor/ Cable	Description: The monitor test failed.
681-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
682-111	D	682 B88	Description: Unable to reserve device.
682-112	D	682 B88	Description: Unable to do configuration.
682-113	D	682 B88	Description: Unable to open the device driver.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
682-121	D	682	Description: The CD-ROM drive indicates an error.
682-122	D	682	Description: The CD-ROM drive indicates an error.
682-123	D	682	Description: The CD-ROM drive indicates an error.
682-125	D	682 B88	Description: The CD-ROM drive indicates an error.
682-126	D	682	Description: The CD-ROM drive indicates an error.
682-127	D	682	Description: The CD-ROM drive indicates an error.
682-128	D	682	Description: The CD-ROM drive indicates an error.
682-129	D	682	Description: The CD-ROM drive indicates an error.
682-150	D	Test Disc 682	Description: A media error was detected.
682-151	D	682 B88	Description: A command timeout was detected.
682-152	D	682	Description: A command reservation conflict was detected.
682-162	D	682	Description: The CD-ROM drive indicates an error.
682-171	D	682	Description: Unable to reserve device.
682-172	D	682	Description: Unable to do configuration.
682-173	D	682	Description: Unable to open device driver.
682-175	D	682	Description: The CD-ROM drive indicates an error.
682-198	D	682 B88	Description: Undefined error detected.
682-199	D	682	Description: Undefined error detected.
682-211	D	682	Description: The LED test failed.
682-281	D	682	Description: No tone during audio test.
682-301	G	682	Description: Errors found during ELA.
682-302	G	682 B88	Description: Errors found during ELA.
683-128	G	683	Description: Error Log Analysis Indicates hardware failure VSS2105 Model B09.
685-001	D	685 Monitor/ cable	Description: RGB_SCREEN_USER_FAIL
685-040	D	685 227 Monitor/ cable	Description: STATUS_POLL_TIMEOUT_ERROR
685-041	D	685 227 Monitor/ cable	Description: CRC_POLL_TIMEOUT_ERROR
685-060	D	software 685	Description: SVC_AIDS_INPUT_ERROR
685-081	D	software 685	Description: LOOP_COUNT_WAS_ZERO

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
685-082	D	software 685	Description: INVALID_TU_NUMBER
685-0B0	D	software 685	Description: ROM test failed.
685-0B1	D	software 685	Description: ROM test failed.
685-0D0	D	softwar 685	Description: INTERNAL_ERROR_DATA_SIZE_0
685-0D1	D	software 685	Description: INTERNAL_ERROR_DATA_SIZE_1
685-0D2	D	software 685	Description: INTERNAL_ERROR_DATA_SIZE_2
685-0D3	D	software 685	Description: INTERNAL_ERROR_DATA_SIZE_3
685-0D5	D	software 685	Description: ODM INIT FAILED
685-0D6	D	software 685	Description: ODM_OBJECT_SEARCH_FAILED
685-0D8	D	software 685	Description: ODM_GET_OBJECT_FAILED
685-0D9	D	software 685	Description: ODM_TERM_FAILED
685-0DB	D	software 685	Description: ILLEGAL_RESOLUTION_SPECIFIED
685-0E5	D	software 685	Description: AIXGSC_MGA_START_INTERRUPT_FAILED
685-0E6	D	software 685	Description: AIXGSC_MGA_STOP_INTERRUPT_FAILED
685-0E7	D	software 685	Description: MDD_OPEN_BUS_FAILED
685-0E8	D	software 685	Description: MDD_IOCTL_ERROR
685-0E9	D	software 685	Description: OPEN_RCM_ERROR
685-0EA	D	software 685	Description: IOCTL_GSC_HANDLE_FAILED
685-0EB	D	software 685	Description: AIXGSC_MAKE_GP_FAILED
685-0EC	D	software 685	Description: AIXGSC_UNMAKE_GP_FAILED
685-0ED	D	software 685	Description: DEVICE_BUSY_ERROR
685-0EE	D	software 685	Description: AIXGSC_MGA_SET_DISPLAY_FAILED

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
685-100	D	685 227 Monitor/ cable	Description: REG_32_BIT_PRTN_ERROR
685-101	D	685 227 Monitor/ cable	Description: REG_32_BIT_ADDR_UNIQ_ERROR
685-102	D	685 227 Monitor/ cable	Description: REG_8_BIT_PTRN_ERROR
685-103	D	685 227 Monitor/ cable	Description: REG_8_BIT_ADDR_UNIQ_ERROR
685-104	D	685 227 Monitor/ cable	Description: CRTC_REGS_PTRN_ERROR
685-105	D	685 227 Monitor/ cable	Description: CRTC_REGS_ADDR_UNIQ_ERROR
685-106	D	685 227 Monitor/ cable	Description: CRTCEXT_REGS_PTRN_ERROR
685-107	D	685 227 Monitor/ cable	Description: CRTCEXT_REGS_ADDR_UNIQ_ERROR
685-108	D	685 227 Monitor/ cable	Description: RAMDAC_REGS_PTRN_ERROR
685-109	D	685 227 Monitor/ cable	Description: RAMDAC_REGS_ADDR_UNIQ_ERROR
685-10A	D	685 227 Monitor/ cable	Description: PALETTE_REGS_PTRN_ERROR
685-10B	D	685 227 Monitor/ cable	Description: PALETTE_REGS_ADDR_UNIQ_ERROR
685-200	D	685 227	Description: ROM test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
685-201	D	685 227	Description: ROM test failed.
685-202	D	685 227	Description: ROM test failed.
685-203	D	685 227	Description: ROM test failed.
685-204	D	685 227	Description: ROM test failed.
685-205	D	685 227	Description: ROM test failed.
685-206	D	685 227	Description: ROM test failed.
685-207	D	685 227	Description: ROM test failed.
685-208	D	685 227	Description: ROM test failed.
685-209	D	685 227	Description: ROM test failed.
685-20B	D	685 227	Description: ROM test failed.
685-400	D	685 227 Monitor/ cable	Description: SGRAM_RED_SCREEN_ERROR
685-401	D	685 227 Monitor/ cable	Description: SGRAM_GREEN_SCREEN_ERROR
685-402	D	685 227 Monitor/ cable	Description: SGRAM_BLUE_SCREEN_ERROR
685-403	D	685 227 Monitor/ cable	Description: SGRAM_WHITE_SCREEN_ERROR
685-404	D	685 227 Monitor/ cable	Description: SGRAM_INCREMENTING_SCREEN_ERROR
685-500	D	685 227 Monitor/ cable	Description: BLIT_TEST_ERROR_640 x 480
685-501	D	685 227 Monitor/ cable	Description: BLIT_TEST_ERROR_800 x 600

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
685-502	D	685 227 Monitor/ cable	Description: BLIT_TEST_ERROR_1024 x 768
685-503	D	685 227 Monitor/ cable	Description: BLIT_TEST_ERROR_1280 x 1024
685-504	D	software 685	Description: INTERNAL_ERROR_DATA_SIZE_4
685-600	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_640 x 480_A
685-601	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_800 x 600_A
685-602	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_1024 x 768_A
685-603	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_1280 x 1024_A
685-604	D	685 227 Monitor/ cable	Description: INTERNAL_ERROR_DATA_SIZE_5
685-605	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_640 x 480_B
685-606	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_800 x 600_B
685-607	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_1024 x 768_B
685-608	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_1280 x 1024_B
685-609	D	software 685	Description: INTERNAL_ERROR_DATA_SIZE_6

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
685-60A	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_640 x 480_C
685-60B	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_800 x 600_C
685-60C	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_1024 x 768_C
685-60D	D	685 227 Monitor/ cable	Description: DRAW_TEST_ERROR_1280 x 1024_C
685-60E	D	software 685	Description: INTERNAL_ERROR_DATA_SIZE_7
686-114	D	686	Description: The register verification test failed.
686-124	D	686	Description: The adapter RAM verification test failed.
686-152	D	686 D57	Description: The data wrap communication test failed.
686-153	D	686	Description: The modem control line test failed.
686-252	D	686	Description: The data wrap communication test failed.
686-253	D	686	Description: The modem control line test failed.
686-501	D	686	Description: Adapter Reset failed
686-511	D	686	Description: Adapter to host memory test failed (byte tag test).
686-512	D	686	Description: Adapter to host memory test failed (word tag test).
686-513	D	686	Description: Adapter to host memory test failed (byte pattern test).
686-514	D	686	Description: Adapter to host memory test failed (word pattern test).
686-521	D	686	Description: Adapter BIOS POST CPU failed.
686-522	D	686	Description: Adapter BIOS POST Checksum failed.
686-523	D	686	Description: Adapter BIOS POST Timer failed.
686-524	D	686	Description: Adapter BIOS POST RAM failed.
686-526	D	686	Description: Adapter BIOS POST Async Ports failed.
686-527	D	686	Description: Adapter BIOS test failed.
686-528	D	686	Description: Adapter BIOS Reset failed.
686-529	D	686	Description: Adapter BIOS Download failed.
686-531	D	686	Description: Adapter BIOS Command failed.
686-533	D	686	Description: Adapter BIOS Timer test failed.
686-534	D	686	Description: Adapter BIOS RAM test failed.
686-541	D	686	Description: Port async internal loopback test failed (general).
686-542	D	686	Description: Port async internal loopback test failed (no response from the port).

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
686-551	D	686	Description: Port async external loopback test failed (general).
686-552	D	686	Description: Port async external loopback test failed (data signals).
686-553	D	686	Description: Port async external loopback test failed (control signals).
686-554	D	686	Description: Port async external loopback test failed (modem signals).
686-555	D	686	Description: Port async external loopback test failed (no response from port).
686-901 to 686-920	D	software 686	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 686; otherwise, suspect a software problem.
686-921	D	686 software	Description: The adapter failed to configure.
686-922 to 686-924	D	software 686	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 686; otherwise, suspect a software problem.
686-925	D	686	Description: The adapter failed to configure software
686-926 to 686-950	D	software 686	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 686; otherwise, suspect a software problem.
687-111	D	687	Description: The controller register test failed.
687-114	D	687	Description: The register verification test failed.
687-124	D	687	Description: The adapter RAM verification test failed.
687-144	D	687	Description: The sync line test failed.
687-152	D	837 684 687 152	Description: The data wrap communication test failed.
687-153	D	687	Description: The modem control line test failed.
687-244	D	687	Description: The sync line test failed.
687-252	D	687	Description: The data wrap communication test failed.
687-253	D	687	Description: The modem control line test failed.
687-501	D	687	Description: Adapter Reset failed.
687-502	D	687	Description: Adapter Fuse failed.
687-511	D	687	Description: Adapter to host memory test failed (byte tag test).
687-512	D	687	Description: Adapter to host memory test failed (word tag test).
687-513	D	687	Description: Adapter to host memory test failed (byte pattern test).
687-514	D	687	Description: Adapter to host memory test failed (word pattern test).

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
687-521	D	687	Description: Adapter BIOS POST CPU failed.
687-522	D	687	Description: Adapter BIOS POST Checksum failed.
687-523	D	687	Description: Adapter BIOS POST Timer failed.
687-524	D	687	Description: Adapter BIOS POST RAM failed.
687-525	D	687	Description: Adapter BIOS POST Sync Line failed.
687-527	D	687	Description: Adapter BIOS test failed.
687-528	D	687	Description: Adapter BIOS Reset failed.
687-529	D	687	Description: Adapter BIOS Download failed.
687-531	D	687	Description: Adapter BIOS Command failed.
687-533	D	687	Description: Adapter BIOS Timer test failed.
687-534	D	687	Description: Adapter BIOS RAM test failed.
687-541	D	687	Description: Port sync internal loopback test failed.
687-551	D	687	Description: Port sync external loopback test failed.
687-600	D	837	Description: 232RAN status test failed.
687-700	D	684	Description: 422RAN status test failed.
687-901 to 687-920	D	software 687	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 687; otherwise, suspect a software problem.
687-921	D	software 687	Description: The adapter failed to configure.
687-922 to 687-924	D	software 687	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 687; otherwise, suspect a software problem.
687-925	D	687 software	Description: The adapter failed to configure.
687-926 to 687-950	D	software 687	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 687; otherwise, suspect a software problem.
689-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
68C-101	D	68C	Description: Timeout while attempting to communicate with SCSI device.
68C-102	D	68C	Description: The SCSI device indicates busy.
68C-103	D	68C	Description: The SCSI device indicates a reservation conflict.
68C-104	D	68C	Description: The SCSI device indicates a check condition.
68C-105	D	68C	Description: An error is detected in request sense data.
68C-107	D	68C	Description: Sense data from the SCSI drive has unexpected data.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
68C-110	D	68C	Description: The **Reserve** command failed.
68C-111	D	68C	Description: Invalid condition from the drive after a reserve.
68C-112	D	68C	Description: The write-protect sensor test failed.
68C-113	D	68C	Description: Invalid condition from drive after a request sense.
68C-114	D	68C	Description: Timeout while attempting to communicate with the SCSI device.
68C-120	D	68C	Description: The **Inquiry** command failed.
68C-130	D	68C media	Description: The **Load** command failed.
68C-134	D	B88 software	Description: The adapter failed to configure.
68C-135	D	68C media	Description: The **Unload** command failed.
68C-140	D	68C	Description: The **Mode Select** command failed.
68C-150	D	68C media	Description: The **Test Unit Ready** command failed.
68C-160	D	68C media	Description: The **Send Diagnostic** command failed.
68C-161	D	68C B88	Description: Invalid condition from the drive after a reserve.
68C-163	D	68C B88	Description: Invalid condition from the drive after a request sense.
68C-164	D	68C B88	Description: Timeout while attempting to communicate with the SCSI device.
68C-165	D	68C B88 276	Description: Write, Read and Compare Test failed.
68C-166	D	68C B88 software	Description: Unable to configure the device.
68C-167	D	68C B88	Description: An unexpected SCSI error occurred.
68C-168	D	B88 software	Description: The adapter failed to configure.
68C-169	D	68C media	Description: The **Send Diagnostic** command failed.
68C-170	D	68C B88 media	Description: The Read, Write and Compare test failed.
68C-180	D	68C media	Description: The **Load** command failed.
68C-185	D	68C media	Description: The **Unload** command failed.
68C-190	D	68C	Description: The **Mode Select** command failed.
68C-200	D	68C media	Description: The **Test Unit Ready** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
68C-201	G	68C B88	Description: Error diagnosed from error log analysis.
68C-210	D	68C B88	Description: The device configuration failed.
68C-211	D	68C B88	Description: The device open failed.
68C-220	D	68C	Description: The **Release** command failed.
68C-230	D	68C	Description: The **Request Sense** command failed.
68C-240	D	68C	Description: The **Openx** command failed.
68C-260	D	68C	Description: The device configuration failed.
68C-261	D	68C	Description: The device open failed.
68C-300	D	68C software	Description: The device configuration failed.
68C-310	D	B88 68C software	Description: SCSI adapter configuration failed.
68C-320	G	68C media	Description: Error log analysis indicates a failure.
68C-411 to 68C-423	D	68C B88 software	Description: A reservation conflict occurred.
68C-511 to 68C-523	D	68C B88	Description: The drive returned bad or non-extended sense data.
68C-611 to 68C-623	D	68C B88 software	Description: An adapter or bus I/O error occurred.
68C-711 to 68C-723	D	68C B88 software	Description: A device timeout error occurred.
68E-001	D	Software 68E	Description: Software error.
68E-002	D	68E Software	Description: Adapter failure.
68E-003	D	68E 227	Description: Adapter failure.
68E-004	D	68E Monitor/ Cable	Description: Display failure.
68E-005	D	68E 227 Monitor/ Cable	Description: Adapter failure.
690-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
691-200	D	691 227	Description: The ATM 25Mbps Adapter open test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
691-202	D	691 227	Description: The ATM 25Mbps Adapter register test failed.
691-203	D	691 227	Description: The ATM 25Mbps Adapter memory test failed.
691-204	D	691 227	Description: The ATM 25Mbps Adapter NVRAM test failed.
691-205	D	691 227	Description: The ATM 25Mbps Adapter interrupt test failed.
691-206	D	691 227	Description: The ATM 25Mbps Adapter wrap test failed.
691-210	D	691 227	Description: The ATM 25Mbps Adapter close test failed.
691-220	D	691 227	Description: The ATM 25Mbps Adapter was not found. Action: Re-install the ATM 25Mbps Adapter and re-run the test. If the error continues, use MAP 210.
691-300	D	Wrap Plug 691 227	Description: The ATM 25Mbps Adapter wrap test failed. Action: Re-install the wrap plug and re-run the test. If the error continues, use MAP 210.
691-700	G	691 227	Description: Error log analysis reported a hardware error.
692-110	D	692	Description: The **Reserve** command failed.
692-120	D	692	Description: The **Inquiry** command failed.
692-130	D	692 media	Description: The **Load** command failed.
692-135	D	692 media	Description: The **Unload** command failed.
692-140	D	692	Description: The **Mode Select** command failed.
692-150	D	692 media	Description: The **Test Unit Ready** command failed.
692-160	D	692 media	Description: The **Send Diagnostic** command failed.
692-169	D	692 media	Description: The **Send Diagnostic** command failed.
692-170	D	692 B88 media	Description: The Read, Write and Compare test failed.
692-180	D	692 media	Description: The **Load** command failed.
692-185	D	692 media	Description: The **Unload** command failed.
692-190	D	692	Description: The **Mode Select** command failed.
692-200	D	692 media	Description: The **Test Unit Ready** command failed.
692-210	D	692 B88	Description: The device configuration failed.
692-220	D	692	Description: The **Release** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
692-230	D	692	Description: The **Request Sense** command failed.
692-240	D	692	Description: The **Openx** command failed.
692-300	D	692 software	Description: The device configuration failed.
692-310	D	B88 692 software	Description: SCSI adapter configuration failed.
692-320	G	692 media	Description: Error log analysis indicates a failure.
692-411 to 692-423	D	692 B88 software	Description: A reservation conflict occurred.
692-511 to 692-523	D	692 B88	Description: The drive returned bad or non-extended sense data.
692-611 to 692-623	D	692 B88 software	Description: An adapter or bus I/O error occurred.
692-711 to 692-723	D	692 B88 software	Description: A device timeout error occurred.
693-100	D	693 227	Description: Adapter open failed.
693-101	D	693 227	Description: Adapter config register test failed.
693-102	D	693 227	Description: Adapter reset failed.
693-103	D	693 227	Description: Adapter I/O register test failed.
693-104	D	693 227	Description: Adapter microcode download test failed.
693-105	D	693 227	Description: Adapter internal wrap test failed.
693-106	D	693 227	Description: Adapter close failed.
697-100	D	697 software 227	Description: Charm memory write failure.
697-101	D	697 software 227	Description: Charm memory read failure.
697-102	D	697 software 227	Description: PCI configuration register write failure.
697-103	D	697 software 227	Description: Charm software reset failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
697-104	D	697 software 227	Description: Packet memory error.
697-105	D	697 software 227	Description: Control memory failure.
697-106	D	697	Description: Link-R detected bad parity.
697-107	D	697	Description: Suni detected bad parity.
697-108	D	697	Description: Suni initialization failure.
697-109	D	Wrap Plug 697	Description: Loss of light detected in Link test. Action: Check wrap plug installation.
697-10B	D	Wrap Plug 697	Description: External Loopback failed Action: Check wrap plug installation.
697-10C	D	697 software 227	Description: Internal Loopback failed.
697-10D	D	697 227 software	Description: DMS failed.
697-121	D	697	Description: Adapter memory test failure.
697-122	D	697	Description: Adapter checksum failure.
697-123	D	697	Description: Internal wrap test failure
697-124	D	697	Description: External wrap test failure
697-125	D	221	Description: Enhanced Error Handling failure on bus
697-126	D	221	Description: Enhanced Error Handling failure on EADS chip
697-127	D	697	Description: Enhanced Error Handling failure on adapter
697-1FF	D	697 software 227	Description: EPROM checksum failed
697-200	D	software 697 227	Description: Klog error
697-201	D	software 697 227	Description: ASL error
697-202	D	software 697 227	Description: ODM Initialization error
697-203	D	software 697 227	Description: Diagnostic configuration failure.
697-205	D	software 697 227	Description: Error in diag open.
697-206	D	software 697 227	Description: Error in releasing adapter

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
697-221	D	697 221	Description: Hardware failure opening the adapter
697-222	D	697 221	Description: Enhanced Error Handling failure opening the adapter
697-223	D	697 221	Description: Interrupt test failure
697-224	D	697 221	Description: Adapter DMA test failure
697-701	G	697 221	Description: Error Log Analysis indicates an I/O failure on the adapter.
697-702	G	697	Description: Error Log Analysis indicates an unrecovered interrupt error.
698-100	D	698 software 227	Description: Charm memory write failure.
698-101	D	698 software 227	Description: Charm memory read failure.
698-102	D	698 software 227	Description: PCI configuration register write failure.
698-103	D	698 software 227	Description: Charm software reset failure.
698-104	D	698 software 227	Description: Packet memory error
698-105	D	698 software 227	Description: Control memory failure.
698-106	D	698	Description: Link-R detected bad parity.
698-107	D	698	Description: Suni detected bad parity.
698-108	D	698	Description: Suni initialization failure.
698-109	D	Wrap Plug 698	Description: Loss of light detected in Link test. Action: Check wrap plug installation.
698-10B	D	Wrap Plug 698	Description: External Loopback failed Action: Check wrap plug installation.
698-10C	D	698 software 227	Description: Internal Loopback failed.
698-10D	D	698 227 software	Description: DMS failed.
698-121	D	698	Description: Adapter memory test failure.
698-122	D	698	Description: Adapter checksum failure.
698-123	D	698	Description: Internal wrap test failure.
698-124	D	698	Description: External wrap test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
698-125	D	221	Description: Enhanced Error Handling failure on bus.
698-126	D	221	Description: Enhanced Error Handling failure on EADS chip.
698-127	D	698	Description: Enhanced Error Handling failure on adapter.
698-1FF	D	698 software 227	Description: EPROM checksum failed.
698-200	D	software 698 227	Description: Klog error.
698-201	D	software 698 227	Description: ASL error.
698-202	D	software 698 227	Description: ODM Initialization error.
698-203	D	software 698 227	Description: Diagnostic configuration failure.
698-205	D	software 698 227	Description: Error in diag open.
698-206	D	software 698 227	Description: Error in releasing adapter.
698-221	D	698 221	Description: Hardware failure opening the adapter.
698-222	D	698 221	Description: Enhanced Error Handling failure opening the adapter.
698-223	D	698 221	Description: Interrupt test failure.
698-224	D	698 221	Description: Adapter DMA test failure.
698-701	G	698 221	Description: Error Log Analysis indicates an I/O failure on the adapter.
698-702	G	698	Description: Error Log Analysis indicates an unrecovered interrupt error.
699-100	D	699	Description: An error was found on the adapter
699-110	G	699	Description: Error Log analysis indicates a hardware error.
699-120	D	699	Description: Adapter hardware has caused a software failure.
69b-101	D	69b	Description: EPROM test failure.
69b-102	D	69b	Description: Adapter SDRAM failure.
69b-103	D	69b	Description: Adapter checksum failure.
69b-104	D	69b	Description: Adapter memory test failure.
69b-105	D	69b	Description: Adapter buffer test failure.
69b-106	D	69b	Description: Adapter cache test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
69b-107	D	69b	Description: Internal loopback test failure.
69b-108	D	69b	Description: External wrap test failure.
69b-109	D	221	Description: Enhanced Error Handling failure on bus.
69b-110	D	221	Description: Enhanced Error Handling failure on Eads chip.
69b-111	D	69b	Description: Enhanced Error Handling failure on adapter.
69b-201	D	69b 221	Description: Hardware failure opening adapter.
69b-202	D	69b 221	Description: Interrupt test failure.
69b-203	D	69b 221	Description: Adapter DMA test failure.
69b-204	D	69b 221	Description: Enhanced error handling failure opening the adapter.
69b-701	G	69b	Description: Error Log Analysis indicates an I/O failure on the adapter.
69d-101	D	69d	Description: EPROM test failure.
69d-102	D	69d	Description: Adapter SDRAM failure.
69d-103	D	69d	Description: Adapter checksum failure.
69d-104	D	69d	Description: Adapter memory test failure.
69d-105	D	69d	Description: Adapter buffer test failure.
69d-106	D	69d	Description: Adapter cache test failure.
69d-107	D	69d	Description: Internal loopback test failure.
69d-108	D	69d	Description: External wrap test failure.
69d-109	D	221	Description: Enhanced Error Handling failure on bus.
69d-110	D	221	Description: Enhanced Error Handling failure on Eads chip.
69d-111	D	69d	Description: Enhanced Error Handling failure on adapter.
69d-201	D	69d 221	Description: Hardware failure opening adapter.
69d-202	D	69d 221	Description: Interrupt test failure.
69d-203	D	69d 221	Description: Adapter DMA test failure.
69d-204	D	69d 221	Description: Enhanced error handling failure opening the adapter.
69d-701	G	69d	Description: Error Log Analysis indicates an I/O failure on the adapter.
6C9-100	D	B88	Description: Unable to configure the parent device.
6C9-101	D	6C9	Description: Unable to open the device.
6C9-102	D	6C9	Description: SCSI command **Reserve** failed.
6C9-103	D	6C9	Description: SCSI command **Inquiry** has failed. Unable to get Additional Vital Product Data.
6C9-104	D	6C9	Description: SCSI command **Mode Sense** has failed.
6C9-105	D	6C9	Description: SCSI command **Mode Select** has failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
6C9-106	D	6C9	Description: SCSI command **Allow Media Removal** has failed.
6C9-107	D	6C9	Description: SCSI command **Prevent Media Removal** has failed.
6C9-108	D	6C9	Description: SCSI command **Start Stop Unit** has failed.
6C9-109	D	6C9	Description: SCSI command **Test Unit Ready** has failed.
6C9-10A	D	6C9	Description: SCSI command **Send Diagnostic** has failed.
6C9-10E	D	6C9	Description: SCSI command **Release** has failed.
6C9-10F	D	6C9	Description: Undetermined hardware error has occurred.
6C9-200	D	6C9 B88	Description: Unable to configure the device
6C9-201	D	6C9	Description: The **Read Media Test** has detected data miscompare. Action: 1. Run Diagnostic on this drive with another Test Media. 2. Use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
6C9-202	D	6C9	Description: DVD-ROM drive has detected a media error. Action: 1. Verify that the Test Media is inserted properly . 2. Run Diagnostic on this drive with another Test Media. 3. Use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
6C9-203	D	6C9 B88	Description: A SCSI reservation conflict has occurred.
6C9-300	D	6C9 B88 190	Description: SCSI command timeout has occurred.
6C9-301	D	6C9 B88 190	Description: Unit Attention has occurred.
6C9-600	G	6C9	Description: ELA indicates an unrecoverable hardware error.

Chapter 34. SRNs 700-102 through 89c-302

Note: Some SRNs in this chapter may have 4 rather than 3 digits after the dash (-).

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
700-XXX to 707-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
709-101	D	709	Description: Cannot run the test because the device driver detected a hardware error.
709-111	D	709 221	Description: Could not do the test because the device driver detected a hardware error.
709-112	D	709 221	Description: Unable to determine the type of adapter from the VPD.
709-113	D	709	Description: The VPD verification test failed.
709-114	D	709	Description: The register verification test failed.
709-115	D	709	Description: The VPD verification test failed.
709-116	D	D57 709	Description: The 128-port controller line test failed.
709-117	D	684	Diagnostics: Remote Async Node test failed.
709-118	D	837	Description: Remote async node test failed.
709-119	F	709	Description: Sync line termination test failed.
709-151	D	837	Description: Could not perform because the device driver detected a hardware error.
709-152	D	837 836	Description: The data wrap communication test failed.
709-153	D	837	Description: The modem control line test failed.
709-154	D	684 709	Diagnostics: Cannot run the test because the device driver detected a hardware error.
709-155	D	684 709 152	Diagnostics: The data wrap communications test failed.
709-161	D	266	Description: Could not perform because the device driver detected a hardware error.
709-162	D	266	Description: The data wrap communication test failed.
709-163	D	266	Description: The modem control line test failed.
709-164	D	D06	Description: The data wrap communication test failed.
709-171	D	259	Description: Could not perform because the device driver detected a hardware error.
709-172	D	259	Description: The data wrap communication test failed.
709-173	D	259	Description: The modem control line test failed.
709-174	D	263	Description: Cannot run the test because the device driver detected a hardware error.
709-175	D	263	Description: The data wrap communications test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
709-181	D	261	Description: Could not perform because the device driver detected a hardware error.
709-182	D	261	Description: The data wrap communication test failed.
709-183	D	261	Description: The modem control line test failed.
709-251	D	709 837	Description: Could not perform because the device driver detected a hardware error.
709-252	D	709 837	Description: The data wrap communication test failed.
709-253	D	709 837	Description: The modem control line test failed.
709-254	D	709 684	Diagnostics: Cannot run the test because the device driver detected a hardware error while running the Remote Async Node wrap test.
709-255	D	709 684	Diagnostics: The data wrap communications test failed while running the Remote Async Node wrap test.
709-271	D	709 837	Description: Could not perform because the device driver detected a hardware error.
709-272	D	709 837	Description: The data wrap communication test failed.
709-273	D	709 837	Description: The modem control line test failed.
709-274	D	709 684	Diagnostics: Cannot run the test because the device driver detected a hardware error while running the Printer/Terminal cable wrap test.
709-275	D	709 684	Diagnostics: The data wrap communications test failed while running the Printer/Terminal cable wrap test.
709-281	D	709 837	Description: Could not perform because the device driver detected a hardware error.
709-282	D	709 837	Description: The data wrap communication test failed.
709-283	D	709 837	Description: The modem control line test failed.
709-481	D	D56	Description: Could not do the test because the device driver detected a hardware error.
709-482	D	D56	Description: The data wrap communication test failed.
709-483	D	D56	Description: The modem control line test failed.
709-901 to 709-920	D	software 709	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 709; otherwise, suspect a software problem.
709-921	D	709 software	Description: The adapter failed to configure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
709-922 to 709-924	D	software 709	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 709; otherwise, suspect a software problem.
709-925	D	709 software	Description: The adapter failed to configure.
709-926 to 709-943	D	software 709	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 709; otherwise, suspect a software problem.
721-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
722-xxx	D	722	Description: Unknown disk drive type is failing.
723-xxx	D	723	Description: Unknown CD-ROM type is failing.
724-xxx	D	724	Description: Unknown tape drive failure.
733-110 to 733-120	D	733	Description: The **Reserve** command failed, or the **Inquiry** command failed.
733-130 to 733-135	D	733 media	Description: The **Load** command failed, or the **Unload** command failed.
733-140	D	733	Description: The **Mode Select** command failed.
733-150 to 733-169	D	733 media	Description: The **Test Unit Ready** command failed, or the **Send Diagnostic** command failed.
733-170	D	733 B88 media	Description: The Read, Write and Compare test failed.
733-180 to 733-185	D	733 media	Description: The **Load** command failed, or the **Unload** command failed.
733-190	D	733	Description: The **Mode Select** command failed.
733-200	D	733 media	Description: The **Test Unit Ready** command failed.
733-210	D	733 B88	Description: The device configuration failed.
733-220 to 733-240	D	733	Description: 140 GB 8 mm tape drive failed.
733-300	D	733 software	Description: The device configuration failed.
733-310	D	B88 733 software	Description: SCSI adapter configuration failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
733-320	G	733 media	Description: Error log analysis indicates a failure.
733-411 to 733-423	D	733 B88 software	Description: A reservation conflict occurred.
733-511 to 733-523	D	733 B88	Description: The drive returned bad or non-extended sense data.
733-611 to 733-723	D	733 B88 software	Description: An adapter, device, or bus I/O error occurred.
734-111	D	734 B88	Description: Unable to reserve device.
734-112	D	734 B88	Description: Unable to do configuration.
734-113	D	734 B88	Description: Unable to open the device driver.
734-121	D	734	Description: The CD-ROM drive indicates an error.
734-122	D	734	Description: The CD-ROM drive indicates an error.
734-123	D	734	Description: The CD-ROM drive indicates an error.
734-125	D	734 B88	Description: The CD-ROM drive indicates an error.
734-126	D	734	Description: The CD-ROM drive indicates an error.
734-127	D	734	Description: The CD-ROM drive indicates an error.
734-128	D	734	Description: The CD-ROM drive indicates an error.
734-129	D	734	Description: The CD-ROM drive indicates an error.
734-150	D	Test Disc 734	Description: A media error was detected.
734-151	D	734 B88	Description: A command timeout was detected.
734-152	D	734	Description: A command reservation conflict was detected.
734-162	D	734	Description: The CD-ROM drive indicates an error.
734-171	D	734	Description: Unable to reserve device.
734-172	D	734	Description: Unable to do configuration.
734-173	D	734	Description: Unable to open device driver.
734-175	D	734	Description: The CD-ROM drive indicates an error.
734-198	D	734 B88	Description: Undefined error detected.
734-199	D	734	Description: Undefined error detected.
734-211	D	734	Description: The LED test failed.
734-281	D	734	Description: No tone during audio test.
734-301	G	734	Description: Errors found during ELA.
734-302	G	734 B88	Description: Errors found during ELA.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
736-101	D	821	Description: An unexpected adapter error occurred.
736-102	D	736 821	Description: An unexpected device or adapter error occurred.
736-103	D	736 821	Description: The keyboard reset failed.
736-104	D	736	Description: Unknown keyboard.
736-105	D	736 821	Description: The keyboard light-on test failed.
736-106	D	736 821	Description: The keyboard light-off test failed.
736-201	D	821	Description: An unexpected adapter error occurred.
736-202	D	736 821	Description: An unexpected device or adapter error occurred.
736-203	D	736 821	Description: The read keyboard ID test failed.
736-204	D	736	Description: The keyboard layout ID test failed.
736-205	D	736 821	Description: The keyboard echo test failed.
736-206	D	736 821	Description: The select scan code set test failed.
736-301	D	821	Description: An unexpected adapter error occurred.
736-302	D	736 821	Description: An unexpected device or adapter error occurred.
736-303	D	736	Description: An error occurred in turning on the lamps.
736-304	D	736	Description: An error occurred in turning off the lamps.
736-401	D	821	Description: An unexpected adapter error occurred.
736-402	D	736 821	Description: An unexpected device or adapter error occurred.
736-403	D	736	Description: Unable to recognize the keyboard.
736-404	D	736 821	Description: The keyboard is failing.
736-701	D	736 821	Description: Error configuring the device.
736-901	G	821	Description: The error log analysis indicates an adapter failure.
736-902	G	736 821	Description: The error log analysis indicates a device failure.
736-903	G	736 821	Description: The error log analysis indicates an unknown failure.
741-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
742-101	D	742	Description: Configuration register test failed.
742-102	D	742	Description: I/O register test failed.
742-104	D	742	Description: Internal loopback test failed.
742-105	D	742	Description: Internal loopback test failed.
742-106	D	742	Description: External loopback test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
742-121	D	D59	Description: Configuration register test failed.
742-122	D	D59	Description: I/O register test failed.
742-124	D	D59	Description: Internal loopback test failed.
742-125	D	D59	Description: Internal loopback test failed.
742-126	D	D59	Description: External loopback test failed.
742-141	D	D60	Description: Configuration register test failed.
742-142	D	D60	Description: I/O register test failed.
742-144	D	D60	Description: Internal loopback test failed.
742-145	D	D60	Description: Internal loopback test failed.
742-160	D	B08	Description: 10Base-T transceiver test failed.
742-161	D	B09	Description: 10Base-2 transceiver test failed.
742-203	D	742 software	Description: Device configuration failed.
742-223	D	D59 software	Description: Device configuration failed.
742-224	D	B08 D59	Description: 10 Base-T transceiver test failed.
742-225	D	B09 D59	Description: 10 Base-2 transceiver test failed.
742-243	D	D60 software	Description: Device configuration failed.
742-700	G	742 software	Description: Error log analysis indicates a hardware problem.
742-720	G	D59 software	Description: Error log analysis indicates a hardware problem.
742-740	G	D60 software	Description: Error log analysis indicates a hardware problem.
745-100	D	media 745	Description: Recovered error. Action: No action required.
745-200	D	media 745	Description: Drive Not Ready. Action: Install media, refer to the tape autoloader service guide.
745-300 to 745-350	D	media 745	Description: 4-mm Tape Auto Loader problem. Action: Replace media, clean drive, refer to the tape autoloader service guide.
745-400	D	745 magazine media	Description: General Hardware Failure. Action: Replace media, clean drive, refer to the tape autoloader service guide.
745-410 to 745-435	D	745 media	Description: Internal Hardware Failure Action: Replace drive, refer to the tape autoloader service guide.
745-440	D	745 SCSI Adapter	Description: SCSI Hardware Failure. Action: Replace drive, refer to the tape autoloader service guide.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
745-441 to 745-443	D	745 media	Description: 4-mm Tape Auto Loader problem. Action: Replace drive, refer to the tape autoloader service guide.
745-444	D	745 environ-ment media	Description: Humidity too High Action: Lower humidity, replace media, refer to the tape autoloader service guide.
745-445	D	clean media drive	Description: Drive Requires Cleaning Action: Clean drive, replace media, refer to the tape autoloader service guide.
745-460 to 745-465	D	745 magazine media	Description: Magazine Movement Failure Action: Check magazine and media, clean rollers, refer to the tape autoloader service guide.
745-470 to 745-475	D	745 magazine media	Description: Media Insert/Eject Failure Action: Check clean magazine and media, clean rollers, refer to the tape autoloader service guide.
745-480 to 745-485	D	745 magazine media	Description: Drawer Open/Close Failure Action: Check magazine and media, refer to the tape autoloader service guide.
745-500	D	745 system	Description: Illegal request to drive Action: Software conflict, refer to the tape autoloader service guide.
745-600	D	745 system	Description: Unit Attention Action: Software conflict, media changed, refer to the tape autoloader service guide.
745-700	D	745 media	Description: Not Writeable Action: Check media for write-protect, refer to the tape autoloader service guide.
745-800	D	745 media	Description: Blank Media Action: Check media, refer to the tape autoloader service guide.
745-B00	D	745 SCSI Adapter	Description: SCSI Interface Failure Action: Check SCSI interface, refer to the tape autoloader service guide.
745-D00	D	745 media	Description: Tape Full Action: Check replace media, refer to the tape autoloader service guide.
746-101	D	221	Description: Enhanced error handling failure on the bus.
746-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
746-103	D	746 221	Description: Enhanced error handling failure on the adapter.
746-212	D	746	Description: FIFO empty bit set.
746-213	D	746	Description: FIFO empty bit clear.
746-214	D	746	Description: FIFO full bit set.
746-215	D	746	Description: FIFO full bit clear.
746-216	D	746	Description: FIFO data miscompare.
746-217	D	746	Description: SCSI FIFO data miscompare.
746-218	D	746	Description: SCSI FIFO underflow.
746-219	D		Description: SCSI parity error. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
746-220	D	746	Description: SCSI FIFO flags error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
746-221	D	746 221	Description: Miscompare during the write/read of the configuration register.
746-222	D	746	Description: Error during the write/read of the memory register.
746-223	D	746	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-224	D	746 221	Description: SCSI configuration register read or write error.
746-225	D	746	Description: Adapter POST failed.
746-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-227	D	746 221	Description: SCSI adapter test failure.
746-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-242	D		Description: SCSI bus error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
746-301	D	746 221	Description: The parent device open failed.
746-701	G	746	Description: Error log analysis indicates a PCI SCSI adapter failure.
746-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
746-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
746-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
747-101	D	221	Description: Enhanced error handling failure on the bus.
747-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
747-103	D	747 221	Description: Enhanced error handling failure on the adapter.
747-212	D	747	Description: FIFO empty bit set.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
747-213	D	747	Description: FIFO empty bit clear.
747-214	D	747	Description: FIFO full bit set.
747-215	D	747	Description: FIFO full bit clear.
747-216	D	747	Description: FIFO data miscompare.
747-217	D	747	Description: SCSI FIFO data miscompare.
747-218	D	747	Description: SCSI FIFO underflow.
747-219	D		Description: SCSI parity error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-220	D	747	Description: SCSI FIFO flags error.
747-221	D	747 221	Description: Miscompare during the write/read of the configuration register.
747-222	D	747	Description: Error during the write/read of the memory register.
747-223	D	747	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-224	D	747 221	Description: SCSI configuration register read or write error.
747-225	D	747	Description: Adapter POST failed.
747-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-227	D	747 221	Description: SCSI adapter test failure.
747-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-242	D		Description: SCSI bus error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
747-301	D	747 221	Description: The parent device open failed.
747-701	G	747	Description: Error log analysis indicates a PCI SCSI adapter failure.
747-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
747-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
747-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
749-xxx	D	749	Description: 7331 Model 205 Tape Library. Refer to service documentation for this device.
750-100	D	750	Description: The adapter open test failed.
750-200	D	750 221	Description: Config register test failed.
750-201	D	750 221	Description: I/O register test failed.
750-202	D	750 221	Description: Adapter self-test failed.
750-300	D	256 750 221	Description: The connect test failed.
750-301	D	256 750 221	Description: Token-ring internal wrap test failure.
750-302	D	256 750 221	Description: Token-ring external wrap failure.
750-303	D	256 750 221	Description: Token-ring initialization test failure.
750-400	D	240 256 750 221	Description: The connect test failed.
750-401	D	240 256 750 221	Token-ring internal wrap test failure.
750-402	D	240 256 750 221	Token-ring external wrap test failure.
750-403	D	240 256 750 221	Token-ring initialization test failure.
750-700	G	750 221	Description: Error Log analysis indicated a hardware failure.
751-101	D	751 227	Description: The PCI wrap test failed. Action: Go to Chapter 18, "MAP 0270: SCSI RAID Problem Resolution and Verification", on page 89.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
751-102	D	751	Description: The POST indicates an adapter failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-103	D	751	Description: The POST indicates an adapter channel failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-104	D	190	Description: The POST indicates a defective cable.
751-105	D	B3A	Description: The POST indicates a defective backplane or external enclosure.
751-106	D	722	Description: The POST indicates a disk failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-108	D	221	Description: Enhanced error handling failure on the bus.
751-109	D	751	Description: The NVRAM test indicates an adapter failure.Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-110	D	722	Description: The disk reported a Predictive Failure Analysis error (PFA). Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-111	D	722	Description: The disk drive has been failed by the adapter. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-112	G	722	Description: ELA indicates that the disk reported a hard data error. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-113	G	722	Description: ELA indicates that the disk reported a hard equipment error. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-114	G	E29	Description: ELA indicates a cache failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-115	G	E30	Description: ELA indicates that the cache battery is either low on power or has failed. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-116	D	751	Description: Failed to disable data scrub.
751-117	D	E29	Description: POST indicates cache failure
751-118	D	E29	Description: NVRAM test indicates cache failure.
751-119	D	E29	Description: NVRAM test indicates that write cache is missing. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-120	D	E29	Description: NVRAM test indicates that cache size is invalid. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-121	D	E30	Description: NVRAM test indicates that the cache battery is low on power. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
751-122	D	E30	Description: NVRAM test indicates cache battery failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-123	D	751	Description: ELA indicates an adapter failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-124	D	221	Description: Enhanced error handling failure on PCI-PCI Bridge.
751-125	D	751 221	Description: Enhanced error handling failure on adapter.
751-400	F	751 190 B3A 722	Description: POST indicates a channel failure. Action: Go to Chapter 18, “MAP 0270: SCSI RAID Problem Resolution and Verification”, on page 89.
751-701	G	751 221	Description: Error Log Analysis indicates an EEH error.
757-110	D	757	Description: The **Reserve** command failed.
757-120	D	757	Description: The **Inquiry** command failed.
757-130	D	757 media	Description: The **Load** command failed.
757-135	D	757 media	Description: The **Unload** command failed.
757-140	D	757	Description: The **Mode Select** command failed.
757-150	D	757 media	Description: The **Test Unit Ready** command failed.
757-160	D	757 media	Description: The **Send Diagnostic** command failed.
757-169	D	757 media	Description: The **Send Diagnostic** command failed.
757-170	D	757 B88 media	Description: The Read, Write and Compare test failed.
757-180	D	757 media	Description: The **Load** command failed.
757-185	D	757 media	Description: The **Unload** command failed.
757-190	D	757	Description: The **Mode Select** command failed.
757-200	D	757 media	Description: The **Test Unit Ready** command failed.
757-210	D	757 B88	Description: The device configuration failed.
757-220	D	757	Description: The **Release** command failed.
757-230	D	757	Description: The **Request Sense** command failed.
757-240	D	757	Description: The **Openx** command failed.
757-300	D	757 software	Description: The device configuration failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
757-310	D	B88 757 software	Description: SCSI adapter configuration failed.
757-320	D	757 media	Description: Error log analysis indicates a failure.
757-411 to 757-423	D	757 B88 software	Description: A reservation conflict occurred.
757-511 to 757-523	D	757 B88	Description: The drive returned bad or non-extended sense data.
757-611 to 757-623	D	757 B88 software	Description: An adapter or bus I/O error occurred.
757-711 to 757-723	D	757 B88 software	Description: A device timeout error occurred.
759-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
763-1xx	D	763 software 221	Description: Problem detected with a device or device data corrupted. **Note:** You may need to reinstall **ssp.css** software.
763-200 to 763-299	D	ext clock 763 wrap plug	Description: Problem detected with the external clock (SP switch). **Notes:** 1. Refer to your *SP Maintenance Information* manual for the external clock FRU part number. 2. The wrap plug FRU part number is listed under the 763 FFC.
763-2A0 to 763-2A9	D	763	Description: Problem detected with the internal clock.
763-3xx	D	763 221	Description: Problem detected with the POS registers.
763-4xx	D	763 software	Description: TBIC test failed.
763-5xx	D	763	Description: SRAM test failed.
763-6xx	D	763	Description: Microprocessor test failed.
763-7xx	D	763	Description: Interrupt test failed.
763-8xx	D	763	Description: FIFO test failed.
763-9xx	D	763 221 Switch- cable	Description: DMA engine test failed. **Note:** Refer to your *SP Maintenance Information* manual for the switch cable FRU part number.
763-Ax3	D	763 terminator	Description: Card wrap test failed. **Note:** The terminator FRU part number is listed under the 763 FFC.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
763-Ax4	D	Switch-cable wrap plug	Description: Card wrap test failed. **Notes:** 1. Refer to your *SP Maintenance Information* manual for the switch cable FRU part number. 2. The wrap plug FRU part number is listed under the 763 FFC.
763-xx2	D	763	Description: Bad adapter card. (except for SRN 763-282) Action: Replace the SP Switch MX Adapter.
764-1xx	D	764 software 221	Description: Problem detected with a device or device data corrupted. **Note:** You may need to reinstall **ssp.css** software.
764-200 to 764-299	D	ext clock 764 wrap plug	Description: Problem detected with the external clock (SP switch). **Notes:** 1. Refer to your *SP Maintenance Information* manual for the external clock FRU part number. 2. The wrap plug FRU part number is listed under the 763 FFC.
764-2A0 to 764-2A9	D	764	Description: Problem detected with the internal clock.
764-3xx	D	764 221	Description: Problem detected with the POS registers.
764-4xx	D	764 software	Description: TBIC test failed.
764-5xx	D	764	Description: SRAM test failed.
764-6xx	D	764	Description: Microprocessor test failed.
764-7xx	D	764	Description: Interrupt test failed.
764-8xx	D	764	Description: FIFO test failed.
764-9xx	D	764 221 switch-cable	Description: DMA engine test failed. **Note:** Refer to your *SP Maintenance Information* manual for the switch cable FRU part number.
764-Ax3	D	764 terminator	Description: Card wrap test failed. **Note:** The terminator FRU part number is listed under the 763 FFC.
764-Ax4	D	Switch-cable wrap plug	Description: Card wrap test failed. **Notes:** 1. Refer to your *SP Maintenance Information* manual for the switch cable FRU part number. 2. The wrap plug FRU part number is listed under the 763 FFC.
764-xx2	D	764	Description: Bad adapter card. (except for SRN 764-282) Action: Replace the SP Switch MX Adapter.
772-XXX to 774-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
775-001	D	775 227 Monitor	Description: ″NO″ to color panel.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
775-002	D	775 Monitor	Description: ″NO″ to cursor panel.
775-007	D	Info code	Description: The EMC_SCROLLING_17_H_TEST failed.
775-009	D	Info code	Description: The EMC_SCROLLING_21_H_TEST failed.
775-064	D	775 227	Description: TRIO64V+_TIMEOUT
775-101	D	775 227	Description: Color miscompare.
775-102	D	775 227	Description: Clipping error.
775-103	D	775 227	Description: Rectangle fill test failed.
775-128	D	software 775	Description: MALLOC_ERROR
775-161	D	software	Description: Loop count value in rules file is zero.
775-191	D	775 227	Description: Red screen error.
775-193	D	775 227	Description: Green screen error.
775-1FF	D	775 227	Description: Rectangle fill test failed.
775-201	D	775 227	Description: Color miscompare.
775-202	D	775 227	Description: Clipping error.
775-203	D	775 227	Description: Image transfer across Plane Test failed.
775-211	D	software	Description: INTERNAL_ERROR_DATA_SIZE
775-212	D	software	Description: INTERNAL_ERROR_NO_ACCESS
775-215	D	775 227	Description: Black screen error
775-217	D	775 227	Description: 9 x 7 Cross hatch grid failed.
775-233	D	software	Description: OPEN_RCM_ERROR
775-234	D	software	Description: IOCTL_GSC_HANDLE_FAILED
775-235	D	software	Description: AIXGSC_MAKE_GP_FAILED
775-236	D	software	Description: AIXGSC_UNMAKE_GP_FAILED
775-237	D	software	Description: DEVICE_BUSY_ERROR
775-241	D	Info code	Description: The SCROLLING_17_H_TEST failed.
775-263	D	Info code	Description: The EMC_SCROLLING_21_H_TEST failed
775-2FF	D	775 227	Description: Image transfer across Plane Test failed.
775-301	D	775 227	Description: A write of ″0x00″ to the palette register failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
775-302	D	775 227	Description: A write of ″0x15″ to the palette register failed.
775-303	D	775 227	Description: A write of ″0x2A″ to the palette register failed.
775-304	D	775 227	Description: A write of ″0x3F″ to the palette register failed.
775-305	D	775 227	Description: The test of the palette registers failed.
775-3FF	D	775 227	Description: The test of the palette registers failed.
775-401	D	775 227	Description: Frame buffer base address inconsistent.
775-402	D	775 227	Description: VRAM inaccessible.
775-403	D	775 227	Description: Miscompare found in VRAM.
775-404	D	775 227	Description: The test of the VRAM failed.
775-447	D	775 227	Description: Green screen error.
775-449	D	775 227	Description: Blue Screen error.
775-471	D	775 227	Description: 9 x 7 Cross hatch grid failed.
775-473	D	775 227	Description: 11 x 9 Cross hatch grid failed.
775-495	D	Info code	Description: The SCROLLING_17_H_TEST failed.
775-497	D	Info code	Description: The SCROLLING_21_H_TEST failed.
775-4FF	D	775 227	Description: The test of the VRAM failed.
775-501	D	775 227	Description: Color miscompare.
775-502	D	775 227	Description: Clipping error.
775-503	D	775 227	Description: Direct Frame Buffer test failed.
775-5FF	D	775 227	Description: Direct Frame Buffer test failed.
775-601	D	775 227	Description: Video Stream Register test failed.
775-602	D	775 227	Description: Video Stream hardware test failed.
775-6FF	D	775 227	Description: Video Stream hardware test failed.
775-701	D	775 227	Description: 0 Degree Short Stroke Draw failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
775-702	D	775 227	Description: 45 Degree Short Stroke Draw failed.
775-703	D	775 227	Description: Blue Screen error, or 90 Degree Short Stroke Draw failed.
775-704	D	775 227	Description: 135 Degree Short Stroke Draw failed.
775-705	D	775 227	Description: White screen error, or 180 Degree Short Stroke Draw failed.
775-706	D	775 227	Description: 225 Degree Short Stroke Draw failed.
775-707	D	775 227	Description: 270 Degree Short Stroke Draw failed.
775-708	D	775 227	Description: 315 Degree Short Stroke Draw failed
775-709	D	775 227	Description: Short Stroke Vector Function test failed.
775-727	D	775 227	Description: 11 x 9 Cross hatch grid failed.
775-750	D	Info code	Description: The SCROLLING_21_H_TEST failed.
775-753	D	Info code	Description: The EMC_SCROLLING_17_H_TEST failed.
775-7FE	D	775 227	Description: Short Stroke Vector Function test failed.
775-7FF	D	software 775 227	Description: Bad vector detected.
775-801	D	775 227	Description: Color for PatBlt thru screen failed.
775-802	D	775 227	Description: Clipping for PatBlt thru screen failed.
775-803	D	775 227	Description: Color for PatBlt Across screen failed.
775-804	D	775 227	Description: Clipping for PatBlt Across screen failed.
775-805	D	775 227	Description: Pattern Fill Across the Plane test failed.
775-8FF	D	775 227	Description: Pattern Fill Across the Plane test failed.
775-901	D	775 227	Description: Color miscompare of white boxes detected.
775-902	D	775 227	Description: Clipping error of white boxes detected.
775-903	D	775 227	Description: Color miscompare of color bars detected.
775-904	D	775 227	Description: Clipping error of white boxes detected.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
775-905	D	775 227	Description: Color miscompare of white boxes detected.
775-906	D	775 227	Description: Clipping error of white boxes detected.
775-907	D	775 227	Description: Color miscompare of white boxes detected.
775-908	D	775 227	Description: Clipping miscompare of white boxes detected.
775-909	D	775 227	Description: The Area fill test (color bars) failed.
775-937	D	775 227	Description: Red screen error.
775-959	D	775 227	Description: White screen error.
775-961	D	775 227	Description: Black screen error.
775-9FF	D	775 227	Description: The Area fill test (color bars) failed.
775-A01	D	775 227	Description: Color miscompare of horizontal top line.
775-A02	D	775 227	Description: Clipping error of horizontal top line.
775-A03	D	775 227	Description: Color miscompare of vertical right line.
775-A04	D	775 227	Description: Clipping error of vertical right line.
775-A05	D	775 227	Description: Color miscompare of horizontal bottom line.
775-A06	D	775 227	Description: Clipping error of horizontal bottom line.
775-A07	D	775 227	Description: Color miscompare of vertical left line.
775-A08	D	775 227	Description: Clipping error of vertical left line.
775-A09	D	775 227	Description: Color miscompare of horizontal center line.
775-A0A	D	775 227	Description: Clipping error of horizontal center line.
775-A0B	D	775 227	Description: Color miscompare of vertical center line.
775-A0C	D	775 227	Description: Clipping error of vertical center line.
775-A0D	D	775 227	Description: Reserved
775-A0F	D	775 227	Description: Reserved

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
775-A10	D	775 227	Description: Color miscompare of textured top line.
775-A11	D	775 227	Description: Clipping error of textured top line.
775-A12	D	775 227	Description: Line Drawing Function test failed.
775-AFF	D	775 227	Description: Line Drawing Function test failed.
775-B01	D	775 227	Description: Rectangle Area Color miscompare detected.
775-B02	D	775 227	Description: Rectangle Area Clip error detected.
775-B03	D	775 227	Description: Clipped Area Horizontal color miscompare (background line color wrong).
775-B04	D	775 227	Description: Clipped Area Horizontal clip miscompare (clip of background line wrong).
775-B05	D	775 227	Description: Clipped Area Vertical color miscompare (background line color wrong).
775-B06	D	775 227	Description: Clipped Area Vertical clip error (clip of background line wrong).
775-B07	D	775 227	Description: The clipping function test failed.
775-BFF	D	775 227	Description: The clipping function test failed.
775-C01	D	775 227	Description: The BIOS read failed.
775-C02	D	775 227	Description: The BIOS function test failed.
775-CFF	D	775 227	Description: The BIOS function test failed.
775-D01	D	775 227	Description: The HW cursor function test failed.
775-DFF	D	775 227	Description: The HW cursor function test failed.
776-101	D	D46	Description: External Test Failure.
776-102	D	240	Description: External Test Failure.
776-103	D	776	Description: I/O Test Failure.
776-104	D	776 221	Description: Adapter On-card Test Failure.
776-105	D	776	Description: Wrap Test Failure.
776-106	D	D46	Description: Wrap Test Failure.
776-106	D	776	Description: Enhanced Error Handling failure on bus.
776-107	D	776	Description: EEH failure on Eads chip.
776-108	D	776	Description: Enhanced Error Handling failure on adapter.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
776-201	D	776 221	Description: Configuration Register Test Failure.
776-202	D	776 221	Description: Wrap Test Failure.
776-203	D	D46 776	Description: Wrap Test Failure.
776-204	D	776 221	Description: Connect Test Failure.
776-205	F	D46 776	Description: External Test Failure. **Action:** Run advanced diagnostics with wrap test for this resource to obtain correct problem isolation.
776-206	D	776 221	Description: Wrap Test Failure.
776-301	D	D46 240 776	Description: External Test Failure.
776-302	F	D46 776 221	Description: External Test Failure. **Action:** Run advanced diagnostics with wrap test for this resource to obtain correct problem isolation.
776-303	F	240 D46 776	Description: External Test Failure. **Action:** Run advanced diagnostics with wrap test for this resource to obtain correct problem isolation.
776-304	D	D46 776 221	Description: Connect Wrap Test Failure.
776-305	D	D46 776 221	Description: Wrap Test Failure.
776-306	D	D46 776 221	Description: Wrap Test Failure.
776-401	F	240 D46 776 221	Description: External Test Failure. **Action:** Run advanced diagnostics with wrap test for this resource to obtain correct problem isolation.
776-404	D	240 D46 776 221	Description: Connect Test Failure.
776-405	D	240 D46 776 221	Description: Wrap Test Failure.
776-406	D	240 D46 776 221	Description: Wrap Test Failure.
776-414	F	240 D46 776 221	Description: Connect Test Failure. This failure occurs if not connected to a functional Token-Ring network. Action: Run advanced diagnostics for this resource to obtain correct problem isolation.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
776-415	F	240 D46 776 221	Description: Wrap Test Failure. This failure occurs if not connected to a functional Token-Ring network. Action: Run advanced diagnostics for this resource to obtain correct problem isolation.
776-416	F	240 D46 776 221	Description: Wrap Test Failure. This failure occurs if not connected to a functional Token-Ring network. Action: Run advanced diagnostics for this resource to obtain correct problem isolation.
776-701	G	776	Description: ELA indicates an adapter error occurred.
776-702	G	776 221	Description: ELA indicates an adapter check occurred.
776-703	G	776 221	Description: ELA indicates a DMA failure occurred.
776-704	G	776 221	Description: ELA indicates a PCI bus failure occurred.
776-705	G	776 221	Description: ELA indicates a Programmed I/O failure occurred.
776-706	G	776	Description: ELA indicates a command write failure occurred.
776-707	G	776	Description: ELA indicates an internal adapter error has occurred.
777-101	D	777	Description: Configuration Register Test Failure.
777-102	D	777	Description: I/O Test Failure.
777-103	D	777	Description: Adapter initialization test failure.
777-104	D	777	Description: Internal wrap test failure.
777-105	D	777	Description: External wrap (10 Mbps) test failure.
777-106	D	777	Description: External wrap (100 Mbps) test failure.
777-107	D	221	Description: Enhanced Error Handling failure on bus.
777-108	D	221	Description: Enhanced Error Handling logic failure.
777-110	D	777	Description: Enhanced Error Handling failure on adapter.
777-201	D	777 221	Description: Configuration Register Test Failure.
777-202	D	777 221	Description: I/O Test Failure.
777-203	D	777 221	Description: Adapter initialization test failure.
777-204	D	777 221	Description: Internal wrap test failure.
777-205	D	777 221	Description: Internal wrap test failure.
777-206	D	777 221	Description: External wrap (10 Mbps) test failure.
777-207	D	777 221	Description: Internal wrap test failure.
777-208	D	777 221	Description: External wrap (100 Mbps) test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
777-701	G	777 221	Description: Error log analysis indicates that the adapter is not responding to initialization commands.
777-702	G	777 221	Description: Error Log Analysis indicates that the device driver has detected a PIO error which it was unable to correct.
777-703	G	777 221	Description: Error log analysis indicates that the adapter has been shut down due to an unrecoverable error.
777-704	G	777 221	Description: Error Log Analysis indicates a problem with the EEPROM on the adapter
777-707	G	777 221	Description: Error Log Analysis indicates that this adapter has failed to initialize due to EEH errors.
778-002	D	software 778	Description: Software error.
778-004	D	software 778	Description: Software error.
778-009	D	software 778	Description: Software error.
778-011	D	software 778	Description: Software error.
778-017	D	software 778	Description: Software error.
778-019	D	778 software	Description: Adapter failure.
778-030	D	778 221	Description: Adapter failure.
778-032	D	software 778	Description: Software error.
778-033	D	software 778	Description: Software error.
778-035	D	778 software	Description: Adapter failure.
778-036 to 778-072	D	software 778	Description: Software error.
778-073	D	778 221	Description: Adapter failure.
778-075	D	software 778	Description: Software error.
778-076	D	778 software	Description: Software error.
778-301 to 778-D02	D	778 221	Description: Adapter failure.
778-E01	D	software 778	Description: Software error.
778-E02 to 778-1401	D	778 221	Description: Adapter failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
778-1402	D	software 778	Description: Software error.
778-1403 to 778-1405	D	778 221	Description: Adapter failure.
778-1500	D	778 software	Description: Adapter failure.
778-1600 to 778-1604	D	778 902	Description: Adapter failure.
778-2501 to 778-2508	D	778 221	Description: Adapter error.
778-2509 to 778-2511	D	software 778	Description: Software error.
778-2601 to 778-2602	D	778 221	Description: Adapter error.
778-2603	D	software 778	Description: Software error.
77B-101	D	77B	Description: Configuration Register Test Failure.
77B-102	D	77B	Description: I/O Test Failure.
77B-103	D	77B	Description: Adapter initialization test failure.
77B-104	D	77B	Description: Internal wrap test failure.
77B-105	D	77B	Description: External wrap (10 Mbps) test failure.
77B-106	D	77B	Description: External wrap (100 Mbps) test failure.
77B-110	D	77B	Description: Enhanced Error handling failure.
77B-701	G	77B	Description: Error log analysis indicates that the adapter is not responding to initialization commands.
77B-702	G	77B	Description: Error Log Analysis indicates that the device driver has detected a PIO error which it was unable to correct.
77B-703	G	77B	Description: Error log analysis indicates that the adapter has been shut down due to an unrecoverable error.
77B-704	G	77B	Description: Error Log Analysis indicates a problem with the EEPROM on the adapter
77B-705	G	77B	Description: Error Log Analysis indicates a non-critical problem with the VPD and the EEPROM on the adapter Action: Schedule deferred maintenance.
77C-XXX			See Chapter 32, “SCSI Devices SRNs”, on page 225.
780-101	D	780 227	Description: Adapter logic test failure.
780-102	D	780	Description: Adapter logic test failure.
780-109	D	780	Description: Adapter channel Input/Output test failure.
780-113	D	780	Description: Adapter Serial Communication Controller (SCC) test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
780-114	D	780 227	Description: Adapter logic test failure.
780-120	D	780 227 software	Description: Adapter could not be detected or configured.
780-140	D	271 780	Description: An error was found with the X.21 interface adapter cable.
780-150	D	272 780	Description: An error was found with the X.24 interface adapter cable.
780-160	D	273 780	Description: An error was found with the X.35 interface adapter cable.
780-170	D	780	Description: The adapter hardware failed.
780-180	D	780	Description: The adapter hardware failed.
780-190	D	780	Description: The adapter hardware failed.
780-210	D	780 185	Description: An error was found on the adapter.
780-211	D	780 227	Description: The adapter card POST test failed.
780-230	D	780	Description: The adapter card hardware failed.
780-232	D	849 227	Description: The adapter card hardware failed.
780-240	D	780	Description: The adapter card hardware failed.
780-250	D	185 780	Description: An error was found on the adapter.
780-260	D	780	Description: The adapter card hardware failed.
780-270	D	780	Description: The adapter card hardware failed.
780-280	D	780	Description: The adapter card hardware failed.
780-290	D	780	Description: The adapter card hardware failed.
780-300	G	780	Description: An adapter error was found during error log analysis.
780-310	G	780 185	Description: An adapter error was found during error log analysis.
780-320	G	780 227	Description: An adapter error was found during error log analysis.
780-330	G	780 227	Description: Error log analysis indicates a hardware problem.
780-400	D	780 227	Description: A software error was caused by a hardware failure.
780-700	D	780 227 software	Description: The adapter failed to configure.
780-720	D	780	Description: Cable wrap test failed.
780-721	D	780	Description: Port wrap test failed.
780-722	D	780	Description: Cable wrap test failed.
781-101	D	781 227	Description: ROS POST adapter software initialization error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
781-102	D	781	Description: Extended DRAM SIP test failed.
781-103	D	781	Description: ROS checksum test failed.
781-104	D	781 227	Adapter download diagnostics failed
781-105	D	781 227	Description: Memory size test failed.
781-106	D	781 227	Description: Interface ID test failed.
781-107	D	781 227	Description: EIB ID test failed.
781-108	D	781 227	Description: ROS version test failed.
781-109	D	781	Description: DUSCC register test failed.
781-111	D	781	Description: DMA register test failed.
781-112	D	781	Description: X.21 PAL test failed.
781-113	D	781	Description: External wrap test failed.
781-114	D	781 227	Description: Twin tail logic test failed.
781-116	D	254	Description: The RS-232 cable wrap test failed.
781-117	D	253	Description: The RS-422A cable wrap test failed.
781-118	D	257	Description: The V.35 cable wrap test failed.
781-119	D	260	Description: The X.21 cable wrap test failed.
781-120	D	781 227 software	Description: The adapter was not detected or could not be configured. test failed.
781-121	D	781 227 software	Description: The 4-port jumper cable assembly wrap test failed.
781-200	G	781	Description: The error log analysis indicates the adapter failed.
781-221	G	781 227	Description: The error log analysis indicates the adapter hardware failed.
781-231	D	855 227	Description: No interface card detected.
781-501	D	B77 B69 227	Description: The power-on self-test (POST) failed.
781-502	D	B77	Description: The memory module failed.
781-503	D	781 227	Description: Adapter hardware failure.
781-504	D	B69	Description: Adapter hardware failure.
781-505	D	B71 B69	Description: Adapter hardware failure.
781-506	D	B72 B69	Description: Adapter hardware failure.
781-507	D	B73 B69	Description: Adapter hardware failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
781-508	D	B74 B69	Description: Adapter hardware failure.
781-516	D	B77 B69	Description: Adapter Test Failure.
781-517	D	B69 B77	Description: Adapter Test Failure.
781-720	D	258 781	4-port multiprotocol cable
783-110	D	783	Description: The **Reserve** command failed.
783-120	D	783	Description: The **Inquiry** command failed.
783-130	D	783 media	Description: The **Load** command failed.
783-135	D	783 media	Description: The **Unload** command failed.
783-140	D	783	Description: The **Mode Select** command failed.
783-150	D	783 media	Description: The **Test Unit Ready** command failed.
783-160	D	783 media	Description: The **Send Diagnostic** command failed.
783-169	D	783 media	Description: The **Send Diagnostic** command failed.
783-170	D	783 B88 media	Description: The Read, Write and Compare test failed.
783-180	D	783 media	Description: The **Load** command failed.
783-185	D	783 media	Description: The **Unload** command failed.
783-190	D	783	Description: The **Mode Select** command failed.
783-200	D	783 media	Description: The **Test Unit Ready** command failed.
783-210	D	783 B88	Description: The device configuration failed.
783-220	D	783	Description: The **Release** command failed.
783-230	D	783	Description: The **Request Sense** command failed.
783-240	D	783	Description: The **Openx** command failed.
783-300	D	783 software	Description: The device configuration failed.
783-310	D	B88 783 software	Description: SCSI adapter configuration failed.
783-320	G	783 media	Description: Error log analysis indicates a failure.
783-411 to 783-423	D	783 B88 software	Description: A reservation conflict occurred.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
783-511 to 783-523	D	783 B88	Description: The drive returned bad or non-extended sense data.
783-611 to 783-623	D	783 B88 software	Description: An adapter or bus I/O error occurred.
783-711 to 783-723	D	783 B88 software	Description: A device timeout error occurred.
784-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
785-111	D	785 227	Could not do the test because the device driver detected a hardware error.
785-114	D	785	The register verification test failed.
785-121	D	785 227	Could not do the test because the device driver detected a hardware error.
785-122	D	785 227	The data wrap communication test failed.
785-123	D	785 227	The modem control line test failed.
785-124	D	785	The memory test failed.
785-151	D	785 D57	Could not do the test because the device driver detected a hardware error.
785-152	D	785 D57	The data wrap communication test failed.
785-153	D	785 D57	The modem control line test failed.
785-171	D	259	Could not do the test because the device driver detected a hardware error.
785-172	D	259	The data wrap communication test failed.
785-173	D	259	The modem control line test failed.
785-181	D	261	Could not do the test because the device driver detected a hardware error.
785-182	D	261	The data wrap communication test failed.
785-183	D	261	The modem control line test failed.
785-251	D	785 D57	Could not perform because the device driver detected a hardware error.
785-252	D	785 D57	The data wrap communication test failed.
785-253	D	785 D57	The modem control line test failed.
785-271	D	785 D57	Could not perform because the device driver detected a hardware error.
785-272	D	785 D57	The data wrap communication test failed.
785-273	D	785 D57	The modem control line test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
785-281	D	785 D57	Could not perform because the device driver detected a hardware error.
785-282	D	785 D57	The data wrap communication test failed.
785-283	D	785 D57	The modem control line test failed.
785-481	D	D57	Could not do the test because the device driver detected a hardware error.
785-482	D	D57	The data wrap communication test failed.
785-483	D	D57	The modem control line test failed.
785-901 to 785-920	D	software 785	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 785; otherwise, suspect a software problem.
785-921	D	785 software	Description: The adapter failed to configure.
785-922 to 785-924	D	software 785	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 785; otherwise, suspect a software problem.
785-925	D	785 software	Description: The adapter failed to configure.
785-926 to 785-943	D	software 785	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 785; otherwise, suspect a software problem.
786-200	D	786 D96 227	Description: Initiation failed. **Note:** You must determine which of the first two FFCs is installed in the system unit.
786-210	D	786 227	Description: The adapter test failed.
786-211	D	D96 227	Description: The adapter test failed.
786-220	D	786 Cable Monitor	Description: The display test failed.
786-221	D	D96 Cable Monitor	Description: The display test failed.
786-710	D	786 227	Description: The ELA indicates HW failure.
786-711	D	D96 227	The ELA indicates HW failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
787-100	D	787	GXT500P Graphics Adapter.
787-101	D	787 227	Description: GXT500P Graphics Adapter.
787-1AA	D	787 RGB Cable Display	Description: GXT500P Graphics Adapter.
787-1xx	D	787	Description: GXT500P Graphics Adapter.
787-200	D	D95	Description: GXT550P Graphics Adapter.
787-201	D	D95 227	Description: GXT550P Graphics Adapter.
787-2AA	D	D95 RGB Cable Display	Description: GXT550P Graphics Adapter.
787-2xx	D	D95	Description: GXT550P Graphics Adapter.
788-001	D	788 227	Description: Adapter Error.
788-002	D	software 788	Description: System Error.
788-003	D	software 788	Description: System Error.
788-004	D	788 software	Description: System Error.
789-101	D	789	Description: Failed to release the device.
789-102	D	789	Description: Failed to reserve the device.
789-103	D	789	Description: The device motor failed to start.
789-104	D	789	Description: Failed to make the device ready.
789-105	D	789	Description: Failed to get the inquiry data.
789-106	D	789	Description: The **Prevent Media Removal** command failed.
789-107	D	789	Description: The **Allow Media Removal** command failed.
789-200	D	789 Optical- Disk	Description: The optical disk failed to load. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the error reoccurs use MAP 210; otherwise, replace the media.
789-201	D	789 Optical- Disk	Description: Failed to unload the optical disk. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the errors reoccur use MAP 210; otherwise, replace the media.
789-202	D	789 Optical- Disk	Description: The diagnostic test failed. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If errors do not reoccur, replace the media; otherwise, run the drive cleaning procedures if applicable and rerun the diagnostics. If errors reoccur, or the drive does not support the cleaning procedures use MAP 210.
789-204	D	789 B88	Description: The device failed to configure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
789-205	D	789 Optical- Disk	Description: The **Test Unit Ready** command failed. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the error reoccurs, use MAP 210; otherwise, replace the media.
789-206	D	789 Optical- Disk	Description: The random write, read and compare test failed. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the errors do not reoccur, replace the media; otherwise, run the drive cleaning procedures if applicable, and rerun diagnostics. If the errors reoccur, or the drive does not support cleaning procedures, use MAP 210.
789-207	D	789 Optical- Disk	Description: A hardware error occurred. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the errors do not reoccur, replace the media; otherwise, run the drive cleaning procedures if applicable, and rerun diagnostics. If the errors reoccur, or the drive does not support cleaning procedures, use MAP 210.
789-208	D	789 Optical- Disk	Description: The **Mode Sense** command failed. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the errors do not reoccur, replace the media; otherwise, run the drive cleaning procedures if applicable, and rerun diagnostics. If the errors reoccur, or the drive does not support cleaning procedures, use MAP 210.
789-209	D	789 Optical- Disk	Description: The **Mode Select** command failed. Action: Change the media. Run diagnostics on the changed media in System Verification mode. If the errors do not reoccur, replace the media; otherwise, run the drive cleaning procedures if applicable, and rerun diagnostics. If the errors reoccur, or the drive does not support cleaning procedures, use MAP 210.
789-300	D	789 B88 software	Description: A SCSI reservation conflict has occurred.
789-400	D	789 B88 Cables software	Description: A SCSI command time out has occurred.
789-401	D	Optical- Disk 190 B88 software	Description: An unknown error has occurred.
789-402	D	Optical- Disk 190 B88 software	Description: Unit attention condition has occurred.
789-600	G	Optical- Disk	Description: ELA indicates that the spare sectors on the disk are exhausted. Action: Backup the media and replace it. **Note:** Use the time when the error occurred and the ″Spare Sector Availability″ service aid to identify the disk that has the error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
789-700	G	789 Optical- Disk	Description: The ELA indicates an equipment error. Action: Run diagnostics in System Verification mode to isolate the problem. If errors are reported, use MAP 210; otherwise, the error is due to faulty media. Backup the media and then replace it. **Note:** Use the time when the error occurred to identify the faulty media.
789-701	G	Optical- Disk 789	Description: ELA indicates an irrecoverable data error. Action: Run diagnostics in System Verification mode to isolate the problem. If errors are reported, use MAP 210; otherwise, the error is due to faulty media. Backup the media and then replace it. **Note:** Use the time when the error occurred to identify the faulty media.
789-702	G	789 B88 Cables	Description: ELA indicates that the adapter detected an error. Action: Use the 7209 Installation and Service Guide. If the unit checks out to be good, use MAP 210.
78B-001	D	Software 78B	Description: Software error.
78B-002	D	78B Software	Description: Adapter failure.
78B-003	D	78B 227	Description: Adapter failure.
78B-004	D	78B Monitor/ Cable	Description: Adapter or display failure.
78B-005	D	78B 227 Monitor/ Cable	Description: Adapter failure.
78D-001	D	software 78D	Description: Software error.
78D-002	D	78D software	Description: Adapter failure.
78D-003	D	78D 227	Description: Adapter failure.
78D-004	D	78D Monitor/ Cable	Description: Display failure.
78D-005	D	78D 227 Monitor/ Cable	Description: Adapter failure.
790-101	D	790	Description: Configuration Register Test failure.
790-102	D	790	Description: I/O test failure.
790-103	D	790	Description: Adapter initialization test failure.
790-104	D	790	Description: Internal wrap test failure.
790-105	D	790	Description: Internal wrap test failure.
790-106	D	790	Description: External wrap (10 Mbps) test failure.
790-107	D	790	Description: Internal wrap test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
790-108	D	790	Description: External wrap (100 Mbps) test failure.
790-109	D	790	Description: External wrap (10 Mbps) test failure.
790-121	D	790	Description: Configuration register test failure.
790-122	D	790	Description: I/O register test failure.
790-124	D	790	Description: Internal loopback test failure.
790-125	D	790	Description: Internal loopback test failure.
790-126	D	790	Description: External loopback test failure.
790-150	D	B08	Description: 10Base-T transceiver test failure.
790-151	D	B09	Description: 10Base-2 transceiver test failure.
790-223	D	790 software	Description: Device configuration failure.
790-224	D	B08 790	Description: 10 Base-T transceiver test failure.
790-225	D	B09 790	Description: 10 Base-2 transceiver test failure.
790-250	D	B08 790	Description: 10 Base-T transceiver test failure.
790-251	D	B09 790	Description: 10 Base-2 transceiver test failure.
790-701	G	790	Description: Error Log Analysis indicates that the adapter is not responding to initialization commands.
790-702	G	790	Description: Error Log Analysis indicates that the device driver has detected a PIO error which it was unable to correct.
790-703	G	790	Description: Error Log Analysis indicates that the adapter has been shutdown due to an unrecoverable error.
790-704	G	790	Description: Error Log Analysis indicates a problem with EEPROM on the adapter.
790-720	G	790 software	Description: Error log analysis indicates a hardware problem.
791-XXX to 793-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
795-201	D	795	Description: Config register test failure.
795-202	D	795	Description: PROM check test failure.
795-203	D	795	Description: Timer and IRQ test failure.
795-204	D	795	Description: Adapter RAM check failure.
795-205	D	795 227	Description: ASIC test failure.
795-206	D	795	Description: High memory (ISA) test failure.
795-207	D	795	Description: RAM check via DMA test failure.
795-208	D	795	Description: FORMAC register test failure.
795-209	D	795 221	Description: PLC1 test failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
795-210	D	795 227	Description: PLC2 test failure.
795-211	D	795	Description: FORMAC Ring_Op test failure.
795-212	D	795	Description: Send long frame test failure.
795-213	D	795	Description: Restricted Token Monitor test failure.
795-214	D	795 227	Description: Receive queue handling test failure.
795-215	D	795 221	Description: FORMAC loopback test failure.
795-216	D	795 221	Description: FORMAC loopback with master access test failure.
795-217	D	795	Description: DMA measurement test failure.
795-218	D	795	Description: Special test failure.
795-219	D	795	Description: Bypass test failure.
795-301	D	795	Description: PLC1 FDDI external wrap failure.
795-302	D	795	Description: PLC2 FDDI external wrap failure.
795-303	D	795	Description: Send long frame FDDI external wrap failure.
795-304	D	795	Description: FORMAC loopback external wrap failure.
795-700	D	795	Description: Error log analysis indicates hardware failure.
799-101	D	2C3 799	Description: External wrap test failed on port 0.
799-102	D	2C3 799	Description: External wrap test failed on port 1.
799-201	D	799 227	Description: Internal adapter test failed.
799-202	D	799 227	Description: External wrap test failed on port 0.
799-203	D	799 227	Description: External wrap test failed on port 1.
799-204	D	2C3 799	Description: External wrap test failed on port 0.
799-205	D	2C3 799	Description: External wrap test failed on port 1.
799-206	D	2C3 799 software	Description: External wrap test failed on port 0.
799-207	D	2C3 799 software	Description: External wrap test failed on port 1.
799-301	D	799 227 software	Description: Internal adapter test failed.
799-302	D	799 227 software	Description: External wrap test failed on port 0.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
799-303	D	799 227 software	Description: External wrap test failed on port 1.
799-304	D	2C3 799 software	Description: External wrap test failed on port 0.
799-305	D	23C 799 software	Description: External wrap test failed on port 1.
799-700	D	799 software	Description: Error log analysis indicates a hardware problem.
7C1-101	D	7C1 software	Description: Audio Subsystem failed.
7C1-102	D	7C1	Description: CS4232 failed.
7C1-103	D	7C1	Description: Clock control failed.
7C1-107	D	7C1	Description: SoundBlaster interface failed.
7C1-108	D	7C1	Description: Loop back failed.
7C1-109	D	7C1	Description: CODEC ID invalid.
7C1-117	D	D97	Description: Internal speaker failed.
801-xxxx	C	xxxx E10 227	Description: No LED value could be determined for the missing resource. **Note:** Note: To obtain the FFC substitute the last three or four digits of the SRN following the dash (-) for xxxx. (The substituted xxxx is the FFC)
802-655	C	655	Description: A resource was not detected that was previously installed.
802-657	C	657	Description: A resource was not detected that was previously installed.
802-684	C	684 687	Description: A potential problem with the RS422 concentrator exists.
802-787	C	787 D95	Description: The diagnostics did not detect an installed resource.
802-78C	C	78C	Description: A system bus problem exists. Action: Use Chapter 10, "MAP 0080: System Bus Problem Isolation", on page 53.
802-78D	C	78D	Description: A resource was not detected that was previously installed.
802-80c	C	80c	Description: A potential problem with a SSA adapter exists. If the system has external SSA drives refer to the *SSA Adapters User's Guide and Maintenance Information* or the service guide for your disk subsystem. If the system has internal SSA drives, go to the SSA MAP in either the system unit's service guide or user's guide.
802-837	C	837 687 E10 227	Description: A potential problem with the Enhanced Remote Async Node exists.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
802-xxxx	C	xxxx E10 227	Description: The diagnostics did not detect an installed resource. **Note:** To obtain the FFC substitute the last three or four digits of the SRN following the dash (-) for xxxx. (The substituted xxxx is the FFC.)
803-xxxx	D	xxxx	Description: A software error occurred while running the diagnostics which could be caused by either hardware or software. **Note:** This SRN can also occur if file the system is full, particularly in the **/** , **/var**, or **/tmp** directories (verify using the **df** command at the AIX prompt, make sure %Used is 90% or less for each file system).Action: Run standalone diagnostics. If you get a different SRN, use it in place of the original SRN. If you get the same SRN, use the last three or four digits of the 803-xxx(x) as the FFC and go to MAP 210. If you get no error from the standalone diagnostics, you may have a problem with the software, contact your support center. **Note:** xxxx corresponds to the last three or four digits of the SRN. If your 803-xxx(x) SRN is not listed, substitute the last three or four digits of the SRN after the dash (-) for xxx(x), then proceed to the FFC table using the substituted digits as your FFC.
804-111	D	804 B88	Description: Unable to reserve device.
804-112	D	804 B88	Description: Unable to do configuration.
804-113	D	804 B88	Description: Unable to open the device driver.
804-121	D	804	Description: The CD-ROM drive indicates an error.
804-122	D	804	Description: The CD-ROM drive indicates an error.
804-123	D	804	Description: The CD-ROM drive indicates an error.
804-125	D	804 B88	Description: The CD-ROM drive indicates an error.
804-126	D	804	Description: The CD-ROM drive indicates an error.
804-127	D	804	Description: The CD-ROM drive indicates an error.
804-128	D	804	Description: The CD-ROM drive indicates an error.
804-129	D	804	Description: The CD-ROM drive indicates an error.
804-150	D	Test Disc 804	Description: A media error was detected.
804-151	D	804 B88	Description: A command timeout was detected.
804-152	D	804	Description: A command reservation conflict was detected.
804-162	D	804	Description: The CD-ROM drive indicates an error.
804-171	D	804	Description: Unable to reserve device.
804-172	D	804	Description: Unable to do configuration.
804-173	D	804	Description: Unable to open device driver.
804-175	D	804	Description: The CD-ROM drive indicates an error.
804-198	D	804 B88	Description: Undefined error detected.
804-199	D	804	Description: Undefined error detected.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
804-211	D	804	Description: The LED test failed.
804-281	D	804	Description: No tone during audio test.
804-301	G	804	Description: Errors found during ELA.
804-302	G	804 B88	Description: Errors found during ELA.
804-xxxx	H	xxxx	Description: An unexpected halt occurred while running the diagnostics. **Note:** xxxx corresponds to the last three or four digits of the SRN. If your 804-xxxx SRN is not listed, substitute the last three or four digits of the SRN after the dash (-) for xxxx, then proceed to the FFC table using the substituted digits as your FFC.
805-110	G	D67	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-111	G	D83	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-120	G	D68	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-121	G	D84	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-130	G	D69	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-131	G	D85	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-140	G	D70	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-141	G	D86	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-150	G	E11	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-151	G	E14	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-210	G	D71	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-211	G	D87	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
805-220	G	D72	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-221	G	D88	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-230	G	D73	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-231	G	D89	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-240	G	D74	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-241	G	D90	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-250	G	E12	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-251	G	E15	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-310	G	D75	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-311	G	D91	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-320	G	D76	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-321	G	D92	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-331	G	D93	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-340	G	D78	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-341	G	D94	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-350	G	E13	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
805-351	G	E16	Description: Error log analysis indicates a machine check due to uncorrectable memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-600	G		Description: Error log analysis indicates a machine check due to uncorrectable memory error or unsupported memory. Action: Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory module(s). Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
805-601	G	210	Description: Error log analysis indicates a machine check due to CPU internal cache error.
805-602	G	214 D01	Description: Error log analysis indicates a machine check due to CPU address/data bus parity error.
805-603	G	210 214 D01	Description: Error log analysis indicates a machine check due to CPU bus transfer error.
805-604	G	210 D01	Description: Error log analysis indicates a machine check due to CPU address/data bus parity error.
805-605	G	210	Description: Error log analysis indicates a machine check due to CPU bus transfer error.
805-606	G	214	Description: Error log analysis indicates a machine check due to memory controller internal error.
805-607	G	210 214	Description: Error log analysis indicates a machine check due to memory address error.
805-608	G	214 217	Description: Error log analysis indicates a machine check due to a Flash ROM error.
805-609	G	D01	Description: Error log analysis indicates a machine check due to a L2 parity error.
805-610	G		Description: Error log analysis indicates a machine check due to ISA device error, but the device could not be identified. Action: Run diagnostics on the ISA devices.
805-611	G		Description: Error log analysis indicates a machine check due to EISA/ISA bus time out error, but the device could not be identified. Action: Run diagnostics on the ISA devices. If multiple devices fail, use FFC 295.
805-612	G	214	Description: Error log analysis indicates a machine check due to an Illegal L2 copy-back operation.
805-616	G	software	Description: Error log analysis indicates a machine check due to software.
805-617	G		Description: Error log analysis indicates a machine check of unknown origin. Action: If the problem is persistent, contact your service support structure.
805-618	G		Description: Error log analysis indicates multiple instances of machine check of unknown origin. Action: If the problem is persistent, contact your service support structure.
805-619	G	221	Description: Error log analysis indicates a machine check due to an unidentified source on the I/O subsystem. Action: Use MAP 210.
805-621	G	292	Description: Error log analysis indicates a machine check due to Integrated PCI device does not respond.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
805-622	G	293	Description: Error log analysis indicates a machine check due to Integrated PCI device does not respond.
805-623	G	294	Description: Error log analysis indicates a machine check due to Integrated PCI device does not respond.
805-624	G	295	Description: Error log analysis indicates a machine check due to Integrated PCI device does not respond.
805-625	G	868	Description: Error log analysis indicates a machine check due to Integrated PCI device does not respond.
805-631	G	292	Description: Error log analysis indicates a machine check due to Internal error from PCI device.
805-632	G	293	Description: Error log analysis indicates a machine check due to Internal error from PCI device.
805-633	G	294	Description: Error log analysis indicates a machine check due to Internal error from PCI device.
805-634	G	295	Description: Error log analysis indicates a machine check due to Internal error from PCI device.
805-635	G	868	Description: Error log analysis indicates a machine check due to Internal error from PCI device.
805-640	G	2E8 214	Description: Error log analysis indicates a machine check due to a system bus error.
805-641	G	2E8 210	Description: Error log analysis indicates a machine check due to a processor bus error.
805-642	G	2E8	Description: Error log analysis indicates a machine check due to a directory parity error.
805-643	G	2E8	Description: Error log analysis indicates a machine check due to a cache paradox.
805-644	G	2E8	Description: Error log analysis indicates a machine check due to an internal error.
805-645	G	2E8	Description: Error log analysis indicates a machine check due to a detected L2 hit signal.
805-646	G	2E8 214	Description: Error log analysis indicates a machine check due to an address/data bus parity error.
805-649	G	software	Description: Error log analysis indicates a machine check due to a disabled I/O address space. Action: Run Standalone Diagnostics on all devices. Use any SRN reported. If no other SRN is reported, suspect a software problem.
805-801	G	166 221	Description: Slow fan or defective thermal sensor. Action: 1) Check spacing around system enclosure, 2) check for obstructions to cooling air flow, 3) check that all fans can rotate freely, and spin with power applied. If reasons 1, 2 and 3 can be ruled out, then replace the listed FRUs.
805-802	G	152 210	Description: Over/Under voltage condition. Action: Check AC line voltage per the Power MAP in your service guide. If the AC line voltage is correct replace the listed FRUs.
805-803	G	2E1 210	Description: System shutdown due to non-critical over temperature condition. Action: 1) check for obstructions to cooling air flow, 2) check for accumulated dust on the CPU and planar. If reasons 1 and 2 can be ruled out, then replace the listed FRUs.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
805-804	G	166 2E1 152	Description: System shutdown due to critical over temperature condition. Action: Check to ensure fans are connected. If fans are connected, then replace the listed FRUs.
805-805	G	152	Description: System shutdown due to loss of AC power. Action: Check the voltage range switch, if present, on the power supply and ensure that it is set to match the AC input voltage. If the range switch is set correctly or is not present refer to ″MAP 1520: Power″ in the Service Guide for your system.
805-807	G	166	Description: System shutdown due to an inoperative fan. Action: Check to ensure fans are connected. If fans are connected replace the listed FRU.
805-811	D	166	Description: Slow fan or defective thermal sensor. Action: 1. Check spacing around system enclosure 2. Check for obstructions to cooling air flow 3. Check that all fans rotate freely, and spin when power is applied. If reasons 1, 2, and 3 can be ruled out, then replace the listed FRUs.
805-812	D	152 210	Description: Over/Under voltage condition. Action: Check the AC line voltage per the Power MAP in your service guide. If the AC line voltage is correct replace the listed FRUs.
805-813	D	2E1 210	Description: System shutdown due to non-critical over temperature condition. Action: 1. Check for obstructions to cooling air flow. 2. Check for accumulated dust on the CPU and planar. If reasons 1 and 2 can be ruled out, then replace the listed FRUs.
806-001 thu 806-017	D	806	Description: GXT800P Graphics Adapter.
806-018	D	806	Description: GXT800P Graphics Adapter Monitor/Display Cable.
806-100	D	806	Description: GXT800P Graphics Adapter.
806-505	D	806 298	Description: GXT800P Graphics Adapter GXT800P Base Memory in slot 0, 1, 2, 3, or 4.
806-515	D	806 297	Description: GXT800P Graphics Adapter GXT800P Base and Texture Memory in slot 0, 1, 2, 3, or 4.
806-619	G	221	Description: Error log analysis indicates a machine check due to an unidentified source on the I/O subsystem.
806-700	D	298	Description: GXT800P Base Memory in slot 0.
806-701	D	298	Description: GXT800P Base Memory in slot 1.
806-702	D	298	Description: GXT800P Base Memory in slot 2.
806-703	D	298	Description: GXT800P Base Memory in slot 3.
806-704	D	298	Description: GXT800P Base Memory in slot 4.
806-710	D	297	Description: GXT800P Base and Texture Memory in slot 0.
806-711	D	297	Description: GXT800P Base and Texture Memory in slot 1.
806-712	D	297	Description: GXT800P Base and Texture Memory in slot 2.
806-713	D	297	Description: GXT800P Base and Texture Memory in slot 3.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
806-714	D	297	Description: GXT800P Base and Texture Memory in slot 4.
806-e00	D	298	Description: GXT800P Base Memory in slot 0.
806-e01	D	298	Description: GXT800P Base Memory in slot 1.
806-e02	D	298	Description: GXT800P Base Memory in slot 2.
806-e03	D	298	Description: GXT800P Base Memory in slot 3.
806-e04	D	298	Description: GXT800P Base Memory in slot 4.
806-e10	D	297	Description: GXT800P Base and Texture Memory in slot 0.
806-e11	D	297	Description: GXT800P Base and Texture Memory in slot 1.
806-e12	D	297	Description: GXT800P Base and Texture Memory in slot 2.
806-e13	D	297	Description: GXT800P Base and Texture Memory in slot 3.
806-e14	D	297	Description: GXT800P Base and Texture Memory in slot 4.
807-102	D	807	Description: A critical failure has occurred on an undefined element. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-103	D	807	Description: A non-critical failure has occurred on an undefined element. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-104	D	807	Description: An unrecoverable failure has occurred on an undefined element. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-122	D	807	Description: A critical power supply failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-123	D	807	Description: A non-critical power supply failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-124	D	807	Description: An unrecoverable power supply failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-132	D	807	Description: A critical fan failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-133	D	807	Description: A non-critical fan failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-134	D	807	Description: An unrecoverable fan failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-148	D	807	Description: The enclosure indicates a temperature threshold warning. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-149	D	807	Description: The enclosure indicates a temperature threshold failure. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-172	D	807	Description: A critical enclosure services failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.
807-173	D	807	Description: A non-critical enclosure services failure has occurred. Action: Go to Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
807-174	D	807	Description: An unrecoverable enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-182	D	807	Description: A critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-183	D	807	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-184	D	807	Description: An unrecoverable failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-192	D	807	Description: A critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-193	D	807	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-194	D	807	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-201	D	807 891	Description: Device configuration error. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-202	D	807 891	Description: The enclosure failed to open. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-203	D	807 891	Description: The enclosure failed to return inquiry data. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-204	D	807	Description: A critical power supply or fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
807-205	D	807	Description: A failure has occurred on a redundant power supply or fan. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
814-112	D	814	Description: The NVRAM test failed.
814-113	D	221	Description: The VPD test failed.
814-114	D	814	Description: I/O Card NVRAM test failed.
815-100	D	815	Description: The floating-point processor test failed.
815-101	D	815	Description: Floating point processor failed.
815-102	D	815	Description: Floating point processor failed.
815-200	D	815 7C0	Description: Power-on self-test indicates a processor failure.
815-201	D	815	Description: Processor has a status of failed. Processors with a failed status are deconfigured and therefore cannot be tested or used by the system.
816-140	D	165 816	Description: The four-digit display test failed.
817-123	D	817	Description: The I/O planar time-of-day clock test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
817-124	D	817	Description: Time of day RAM test failed.
817-210	D	817	Description: The time-of-day clock is at POR.
817-211	D	817 169	Description: Time of day POR test failed.
817-212	D	151 816	Description: The battery is low.
817-213	D	817	Description: The real-time clock is not running.
817-215	D	817	Description: Time of day clock not running test failed.
817-217	D	817 169	Description: Time of day clock not running.
821-111	D	821 B31	Description: Unexpected results from the test.
821-332	D	821 software	Description: Cannot open device.
823-111	D	823	Description: Standard Mouse adapter failed.
823-134	D	823 software	Description: Cannot open device.
823-211	D	925 823	Description: Standard mouse adapter failed.
824-220	D	B10 824	Description: The tablet adapter fuse failed.
824-331	D	824 227	Description: An unexpected error occurred.
824-332	D	824 227	Description: The enable/disable device test failed. **Note:**Ensure that the wrap plug was not attached when the test was run. If the wrap plug was attached, remove it, and rerun the test.
824-333	D	824	Description: The internal wrap test failed.
824-334	D	B10 824	Description: The tablet adapter fuse failed.
824-441	D	824	Description: An unexpected error occurred.
824-442	D	824	Description: The wrap test failed.
824-450	D	227	Description: Software error caused by hardware failure.
824-461	G	227	Description: The error log analysis indicates a hardware failure.
824-511	D	824	Description: An unexpected error occurred.
824-512	D	824	Description: Tablet adapter reset test failed.
824-522	D	B10 824	Description: Adapter fuse failure.
824-523	D	824	Description: Device cannot be configured.
824-524	D	824 software	Description: Cannot open device.
826-111	D	221	Description: Cannot run the test because the device driver detected a hardware error.
826-112	D	221	Description: Unable to determine the type of adapter from the VPD.
826-113	D	826	Description: The VPD verification test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
826-114	D	826	Description: The register verification test failed.
826-121	D	221	Description: Cannot run the test because the device driver detected a hardware error.
826-122	D	221	Description: The data-wrap communications test failed.
826-123	D	221	Description: The modem control line test failed.
826-131	D	221	Description: Cannot run the test because the device driver detected a hardware error.
826-132	D	221	Description: The data wrap communications test failed.
826-133	D	221	Description: The modem control line test failed.
826-161	D	252	Description: Cannot run the test because the device driver detected a hardware error.
826-162	D	252	Description: The data wrap communications test failed.
826-163	D	252	Description: The modem control line test failed.
826-171	D	259	Description: Cannot run the test because the device driver detected a hardware error.
826-172	D	259	Description: The data wrap communications test failed.
826-173	D	259	Description: The modem control line test failed.
826-181	D	261	Description: Cannot run the test because the device driver detected a hardware error.
826-182	D	261	Description: The data wrap communications test failed.
826-183	D	261	Description: The modem control line test failed.
826-271	D	826 259	Description: Cannot run the test because the device driver detected a hardware error.
826-272	D	826 259	Description: The data wrap communications test failed.
826-273	D	826 259	Description: The modem control line test failed.
826-281	D	826 259	Description: Cannot run the test because the device driver detected a hardware error.
826-282	D	826 259	Description: The data wrap communications test failed.
826-283	D	826 259	Description: The modem control line test failed.
826-321	D	826	Description: Cannot run the test because the device driver detected a hardware error.
826-322	D	826	Description: The data wrap communications test failed.
826-323	D	826	Description: The modem control line test failed.
826-331	D	826	Description: Cannot run the test because the device driver detected a hardware error.
826-332	D	826	Description: The data wrap communications test failed.
826-333	D	826	Description: The modem control line test failed.
826-371	D	826	Description: Cannot run the test because the device driver detected a hardware error.
826-372	D	826	Description: The data wrap communications test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
826-373	D	826	Description: The modem control line test failed.
826-381	D	826	Description: Could not do the test because the device driver detected a hardware error.
826-382	D	826	Description: The data wrap communication test failed.
826-383	D	826	Description: The modem control line test failed.
826-481	D	D56	Description: Could not do the test because the device driver detected a hardware error.
826-482	D	D56	Description: The data wrap communication test failed.
826-483	D	D56	Description: The modem control line test failed.
826-581	D	826 D56	Description: Could not do the test because the device driver detected a hardware error.
826-582	D	826 D56	Description: The data wrap communication test failed.
826-583	D	826 D56	Description: The modem control line test failed.
826-901 to 826-920	D	software 826	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 826; otherwise, suspect a software problem.
826-921	D	826 software	Description: The adapter failed to configure.
826-922 to 826-924	D	software 826	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 826; otherwise, suspect a software problem.
826-925	D	826 software	Description: The adapter failed to configure.
826-926 to 826-943	D	software 826	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 826; otherwise, suspect a software problem.
827-112	D	221	Description: The parallel port data register write/read test failed.
827-121	D	827	Description: Cannot run the test because the device driver detected a hardware error.
827-122	D	827	Description: The parallel port data register write/read test failed.
827-123	D	827	Description: The parallel port control register write/read test failed.
827-124	D	827	Description: The parallel port data register read test failed.
827-125	D	827	Description: The parallel port control register read test failed.
827-126	D	827	Description: The parallel port control register read test failed.
827-131	D	827	Description: Cannot run the test because the device driver detected a hardware error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
827-132	D	827	Description: The control port register direction bit (write) test with BIDI enabled failed.
827-133	D	827	Description: The control port register direction bit (read) test with BIDI enabled failed.
827-141	D	827	Description: Cannot run the test because the device driver detected a hardware error.
827-142	D	827	Description: The parallel port control register write/read test with BIDI enabled failed.
827-151	D	221	Description: Cannot run the test because the device driver detected a hardware error.
827-152	D	827	Description: The parallel port status register read test failed.
827-161	D	827	Description: Cannot run the test because the device driver detected a hardware error.
827-162	D	221	Description: The parallel port interrupt test failed.
827-163	D	221	Description: The parallel port interrupt test failed.
827-201	D	827	Description: The extend control register of the parallel port failed a read/write test.
827-202	D	827	Description: Input/output to the FIFO (without interrupts) failed.
827-203	D	827	Description: Input/output to the FIFO (with interrupts) failed.
827-204	D	827	Description: Direct memory access to the FIFO failed.
828-501	D	828	Description: The diskette adapter test failed.
82C-102	D	82C	Description: Adapter test failed.
82C-104	D	82C 725	Description: Display test failed.
830-111	D	830 227	Description: Could not do the test because the device driver detected a hardware error.
830-114	D	830	Description: The register verification test failed.
830-121	D	830 227	Description: Could not do the test because the device driver detected a hardware problem.
830-122	D	830 227	Description: The data wrap communication test failed.
830-123	D	830 227	Description: The modem control line test failed.
830-124	D	830	Description: The memory test failed.
830-151	D	B54 830	Description: Could not do the test because the device driver detected a hardware error.
830-152	D	B54 830	Description: The data wrap communication test failed.
830-153	D	D54 830	Description: The modem control line test failed.
830-171	D	259	Description: Could not run the test because the device driver detected a hardware error.
830-172	D	259	The data wrap communication test failed.
830-173	D	259	Description: The modem control line test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
830-181	D	261	Description: Could not do the test because the device driver detected a hardware error.
830-182	D	261	Description: The data wrap communication test failed.
830-183	D	261	Description: Interposer Wrap test failed.
830-251	D	830 D57	Description: Could not perform because the device driver detected a hardware error.
830-252	D	830 B54	Description: The data wrap communication test failed.
830-253	D	830 B54	Description: The modem control line test failed.
830-271	D	830 B54	Description: Could not perform because the device driver detected a hardware error.
830-272	D	830 B54	Description: The data wrap communication test failed.
830-273	D	830 B54	Description: The modem control line test failed.
830-281	D	830 D57	Could not perform the test because the device driver detected a hardware error.
830-282	D	830 B54	Description: The data wrap communication test failed.
830-283	D	830 B54	Description: The modem control line test failed.
830-481	D	B54	Description: Could not do the test because the device driver detected a hardware error.
830-482	D	B54	Description: The data wrap communication test failed.
830-483	D	B54	Description: Async Cable Wrap Test failed.
830-901 to 830-920	D	software 830	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 830; otherwise, suspect a software problem.
830-921	D	830 software	Description: The adapter failed to configure.
830-922 to 830-924	D	software 830	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 830; otherwise, suspect a software problem.
830-925	D	830 software	Description: The adapter failed to configure.
830-926 to 830-943	D	software 830	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 830; otherwise, suspect a software problem.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
831-111	D	221	Description: Cannot run the test because the device driver detected a hardware error.
831-112	D	221	Description: Unable to determine the type of adapter from the VPD.
831-113	D	831	Description: The VPD verification test failed.
831-114	D	831	Description: The register verification test failed.
831-121	D	221	Description: Cannot run the test because the device driver detected a hardware error.
831-122	D	221	Description: The data wrap communications test failed.
831-123	D	221	Description: The modem control line test failed.
831-131	D	221	Description: Cannot run the test because the device driver detected a hardware error.
831-132	D	221	Description: The data wrap communications test failed.
831-133	D	221	Description: The modem control line test failed.
831-161	D	252	Description: Cannot run the test because the device driver detected a hardware error.
831-162	D	252	Description: The data wrap communications test failed.
831-163	D	252	Description: The modem control line test failed.
831-164	D	221 252	Description: Cannot run the test because the device driver detected a hardware error.
831-165	D	221 252	Description: The data wrap communications test failed.
831-166	D	221 252	Description: The modem control line test failed.
831-171	D	259	Description: Cannot run the test because the device driver detected a hardware error.
831-172	D	259	Description: The data wrap communications test failed.
831-173	D	259	Description: The modem control line test failed.
831-181	D	261	Description: Cannot run the test because the device driver detected a hardware error.
831-182	D	261	Description: The data wrap communications test failed.
831-183	D	261	Description: The modem control line test failed.
831-271	D	831 259	Description: Cannot run the test because the device driver detected a hardware error.
831-272	D	831 259	Description: The data wrap communication test failed.
831-273	D	831 259	Description: The modem control line test failed.
831-281	D	831 259	Description: Cannot run the test because the device driver detected a hardware error.
831-282	D	831 259	Description: The data wrap communications test failed.
831-283	D	831 259	Description: The modem control line test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
831-321	D	831	Description: Cannot run the test because the device driver detected a hardware error.
831-322	D	831	Description: The data wrap communications test failed.
831-323	D	831	Description: The modem control line test failed.
831-331	D	831	Description: Cannot run the test because the device driver detected a hardware error.
831-332	D	831	Description: The data wrap communications test failed.
831-333	D	831	Description: The modem control line test failed.
831-371	D	831	Description: Cannot run the test because the device driver detected a hardware error.
831-372	D	831	Description: The data wrap communications test failed.
831-373	D	831	Description: The modem control line test failed.
831-381	D	831	Description: Cannot run the test because the device driver detected a hardware error.
831-382	D	831	Description: The data wrap communications test failed.
831-383	D	831	Description: The modem control line test failed.
831-481	D	D56	Description: Could not do the test because the device driver detected a hardware error.
831-482	D	D56	Description: The data wrap communication test failed.
831-483	D	D56	Description: The modem control line test failed.
831-581	D	831 D56	Description: Could not do the test because the device driver detected a hardware error.
831-582	D	831 D56	Description: The data wrap communication test failed.
831-583	D	831 D56	Description: The modem control line test failed.
831-901 to 831-920	D	software 831	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 831; otherwise, suspect a software problem.
831-921	D	831 software	Description: The adapter failed to configure.
831-922 to 831-924	D	software 831	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 831; otherwise, suspect a software problem.
831-925	D	831 software	Description: The adapter failed to configure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
831-926 to 831-943	D	software 831	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 831; otherwise, suspect a software problem.
832-xxxx	G	xxxx	Description: I/O bridge/device internal error **Note:** xxxx represents the last 3 or 4 digits of the SRN after the dash (-).
833-xxxx	G	xxxx 296 2C9	Description: PCI device address parity error, PCI device data parity error, or PCI device abort error. The diagnostics screen indicates the actual error. **Note:** xxxx represents the last 3 or 4 digits of the SRN after the dash (-).
836-101	D	836	Description: Cannot run the test because the device driver detected a hardware error.
836-111	D	836 227	Description: Cannot run test because the device driver detected a hardware error.
836-112	D	836 227	Description: Unable to determine the type of adapter from the VPD.
836-113	D	836	Description: The VPD verification test failed.
836-114	D	836	Description: The register verification test failed.
836-115	D	836	Description: The VPD verification test failed.
836-116	D	B54 836	Description: The 128-port controller line test failed.
836-117	D	684	Description: Remote Async Node test failed.
836-118	D	837	Description: Remote async node test failed.
836-119	F	836	Description: Sync line termination test failed.
836-151	D	837	Description: Cannot run the test because the device driver detected a hardware error.
836-152	D	837	Description: The data wrap communications test failed.
836-153	D	837	Description: The modem control line test failed.
836-154	D	684 836	Description: Cannot run the test because the device driver detected a hardware error.
836-155	D	684 836 152	Description: The data wrap communications test failed.
836-161	D	C22	Description: Cannot run the test because the device driver detected a hardware error.
836-162	D	C22	Description: The data wrap communications test failed.
836-163	D	C22	Description: The modem control line test failed.
836-164	D	D06	Description: The data wrap communication test failed.
836-171	D	259	Description: Cannot run the test because the device driver detected a hardware error.
836-172	D	259	Description: The data wrap communications test failed.
836-173	D	259	Description: The modem control line test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
836-174	D	263	Description: Cannot run the test because the device driver detected a hardware error while running the Printer/Terminal cable wrap test.
836-175	D	263	Description: The data wrap communications test failed while running the Printer/Terminal cable wrap test.
836-181	D	261	Description: Cannot run the test because the device driver detected a hardware error.
836-182	D	261	Description: The data wrap communications test failed.
836-183	D	261	Description: The modem control line test failed.
836-251	D	836 837	Description: Cannot run the test because the device driver detected a hardware error.
836-252	D	836 837	Description: The data wrap communications test failed.
836-253	D	836 837	Description: The modem control line test failed.
836-254	D	836 837	Description: Cannot run the test because the device driver detected a hardware error while running the Remote Async Node wrap test.
836-255	D	836 684	Description: The data wrap communications test failed while running the Remote Async Node wrap test.
836-271	D	836 837	Description: Cannot run the test because the device driver detected a hardware error.
836-272	D	836 837	Description: The data wrap communications test failed.
836-273	D	836 837	Description: The modem control line test failed.
836-274	D	836 684	Description: Cannot run the test because the device driver detected a hardware error while running the Printer/Terminal cable wrap test.
836-275	D	836 684	Description: The data wrap communications test failed while running the Printer/Terminal cable wrap test.
836-281	D	836 837	Description: Cannot run the test because the device driver detected a hardware error.
836-282	D	836 837	Description: The data wrap communication test failed.
836-283	D	836 837	Description: The modem control line test failed.
836-481	D	D56	Description: Could not do the test because the device driver detected a hardware error.
836-482	D	D56	Description: The data wrap communication test failed.
836-483	D	D56	Description: The modem control line test failed.
836-901 to 836-920	D	software 836	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 836; otherwise, suspect a software problem.
836-921	D	836 software	Description: The adapter failed to configure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
836-922 to 836-924	D	software 836	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 836; otherwise, suspect a software problem.
836-925	D	836 software	Description: The adapter failed to configure.
836-926 to 836-943	D	software 836	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 836; otherwise, suspect a software problem.
840-101	D	221	Description: Enhanced error handling failure on the bus.
840-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
840-103	D	840 221	Description: Enhanced error handling failure on the adapter.
840-212	D	840	Description: FIFO empty bit set.
840-213	D	840	Description: FIFO empty bit clear.
840-214	D	840	Description: FIFO full bit set.
840-215	D	840	Description: FIFO full bit clear.
840-216	D	840	Description: FIFO data miscompare.
840-217	D	840	Description: SCSI FIFO data miscompare.
840-218	D	840	Description: SCSI FIFO underflow.
840-219	D		Description: SCSI parity error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-220	D	840	Description: SCSI FIFO flags error.
840-221	D	840 221	Description: Miscompare during the write/read of the configuration register.
840-222	D	840	Description: Error during the write/read of the memory register.
840-223	D	840	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-224	D	840 221	Description: SCSI configuration register read or write error.
840-225	D	840	Description: Adapter POST failed.
840-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-227	D	840 221	Description: SCSI adapter test failure.
840-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
840-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-240	D		Description: No terminal power. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-242	D		Description: SCSI bus error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
840-301	D	840 221	Description: The parent device open failed.
840-701	G	840	Description: Error log analysis indicates a PCI SCSI adapter failure.
840-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
840-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
840-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in "General SCSI Configuration Checks" on page 2 to resolve the problem.
844-xxx series	D	844	Description: A 7135 controller problem is indicated. Action: Use 7135 documentation.
845-xxx series	D	845	Description: A 7135 DASD drawer problem is indicated. Action: Use 7135 documentation.
846-xxx series	D	846	Description: A 7135 DASD drawer problem is indicated. Action: Use 7135 documentation.
868-101	D	221	Description: Enhanced error handling failure on the bus.
868-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
868-103	D	868 221	Description: Enhanced error handling failure on the adapter.
868-110	D	221	Description: The adapter diagnostic subcommand test failed.
868-130	D	279	Description: The adapter fuse test failed.
868-140	D	868	Description: The wrap test failed.
868-150	D	868	Description: The BCR registers write/read test failed.
868-160	D	868	Description: The POS registers write/read test failed.
868-170	D	868	Description: The internal/external reset test failed.
868-180	D	279 868	Description: The adapter command timed out. **Note:** Check the fuse before replacing.
868-190	D	221	Description: A software error was caused by a hardware failure.
868-191	G	868	Description: Analysis of the error log indicates a problem with the hardware.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
868-192	G	221	Description: Analysis of the error log indicates a problem with the hardware.
868-193	G	279	Description: Analysis of the error log indicates a problem with the hardware.
868-194	G	868	Description: Analysis of the error log indicates a problem with the hardware.
868-200	D	868	Description: ROM CRC error.
868-201	D	868	Description: Adapter RAM error.
868-202	D	868	Description: The control logic failed.
868-203	D	868	Description: The control logic failed.
868-204	D	868	Description: The control logic failed.
868-205	D	868	Description: The control logic failed.
868-206	D	868	Description: Diagnostics completed with a previous error.
868-211	D	279 868 software	Description: The device failed to configure.
868-212	D	868	Description: FIFO empty bit set.
868-213	D	868	Description: FIFO empty bit clear.
868-214	D	868	Description: FIFO full bit set.
868-215	D	868	Description: FIFO full bit clear.
868-216	D	868	Description: FIFO data miscompare.
868-217	D	868	Description: SCSI FIFO data miscompare.
868-218	D	868	Description: SCSI FIFO underflow.
868-219	D		Description: SCSI parity error. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
868-220	D	868	Description: SCSI FIFO flags error.
868-221	D	868 221	Description: Miscompare during the write/read of the configuration register.
868-222	D	868	Description: Error during the write/read of the memory register.
868-223	D	868	Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
868-224	D	868 221	Description: SCSI configuration register read or write error.
868-225	D	868	Description: Adapter POST failed.
868-226	D		Description: SCSI wrap or PTC failure. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
868-227	D	868 221	Description: SCSI adapter test failure.
868-230	D		Description: Arbitration test failed. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
868-231	D		Description: Function could not complete. Action: Go to Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
868-232	D		Description: SCSI bus data miscompare. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
868-240	D		Description: No terminal power. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
868-242	D		Description: SCSI bus error. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
868-301	D	868 221	Description: Configuration open failed for parent bus.
868-701	G	868	Description: Error log analysis indicates a PCI SCSI adapter failure.
868-801	G		Description: Error log analysis indicates a terminator problem. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in “General SCSI Configuration Checks” on page 2 to resolve the problem.
868-802	G		Description: Error log analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in “General SCSI Configuration Checks” on page 2 to resolve the problem.
868-803	G		Description: Error log analysis indicates that multiple SCSI bus errors have occurred. Action: Run the diagnostics on the adapter in System Verification mode. If an SRN is reported, use the SRN to resolve the problem. If an SRN is not reported, use the SCSI service hints in “General SCSI Configuration Checks” on page 2 to resolve the problem.
887-101	D	887	Description: POS register test failed.
887-102	D	887	Description: I/O register test failed.
887-103	D	887	Description: Local RAM test failed.
887-104	D	887	Description: Vital Product Data (VPD) failed.
887-105	D	887	Description: LAN coprocessor internal tests failed.
887-106	D	887	Description: Internal loopback test failed.
887-107	D	887	Description: External loopback test failed.
887-108	D	887	Description: External loopback test failed.
887-109	D	887	Description: External loopback parity tests failed.
887-110	D	887	Description: External loopback fairness test failed.
887-111	D	887	Description: External loopback fairness and parity tests failed.
887-112	D	887	Description: External loopback (twisted pair) test failed.
887-113	D	887	Description: External loopback (twisted pair) parity test failed.
887-114	D	887	Description: Ethernet loopback (twisted pair) fairness test failed.
887-115	D	887	Description: External loopback (twisted pair) fairness and parity tests failed.
887-116	D	887	Description: Twisted pair wrap data failed.
887-117	D	887 software	Description: Device configuration fails.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
887-118	D	887	Description: Device driver indicates a hardware problem.
887-120	D	887	Description: Device driver indicates a hardware problem.
887-121	D	B08	Description: Ethernet transceiver test failed.
887-122		B09	Description: Ethernet 10 Base-2 transceiver test failed.
887-123	D	887	Description: Internal loopback test failed.
887-124	G	887 software	Description: Error log indicates a hardware problem.
887-125	G	887	Description: Fuse test failed.
887-202	D	887	Description: Vital product data test failed.
887-203	D	887	Description: Vital product data test failed.
887-209	D	887	Description: RJ-45 converter test failed.
887-304	D	887	Description: Coprocessor internal test failed.
887-305	D	887	Description: Internal loopback test failed.
887-306	D	887	Description: Internal loopback test failed.
887-307	D	887	Description: External loopback test failed.
887-319	D	887 software	Description: Device driver indicates a hardware failure.
887-400	D	887	Description: Fuse test failed.
887-401	D	887	Description: Circuit breaker for Ethernet test failed.
887-402	D	B09 887	Description: Ethernet 10 Base-2 transceiver test failed.
887-403	D	B08 887	Description: Ethernet 10 Base-T transceiver test failed.
887-404	D	C29 887	Description: RJ-45 converter test failed.
887-405	F	Ethernet- network 887	Description: Rerun diagnostics in advanced mode for accurate problem determination.
89c-111	D	89c B88	Description: Unable to reserve device.
89c-112	D	89c B88	Description: Unable to do configuration.
89c-113	D	89c B88	Description: Unable to open the device driver.
89c-121	D	89c	Description: The CD-ROM drive indicates an error.
89c-122	D	89c	Description: The CD-ROM drive indicates an error.
89c-123	D	89c	Description: The CD-ROM drive indicates an error.
89c-125	D	89c B88	Description: The CD-ROM drive indicates an error.
89c-126	D	89c	Description: The CD-ROM drive indicates an error.
89c-127	D	89c	Description: The CD-ROM drive indicates an error.
89c-128	D	89c	Description: The CD-ROM drive indicates an error.
89c-129	D	89c	Description: The CD-ROM drive indicates an error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
89c-150	D	Test-Disc 89c	Description: A media error was detected.
89c-151	D	89c D88	Description: A command timeout was detected.
89c-152	D	89c	Description: A command reservation conflict was detected.
89c-162	D	89c	Description: The CD-ROM drive indicates an error.
89c-171	D	89c	Description: Unable to reserve device.
89c-172	D	89c	Description: Unable to do configuration.
89c-173	D	89c	Description: Unable to open device driver.
89c-175	D	89c	Description: The CD-ROM drive indicates an error.
89c-198	D	89c B88	Description: Undefined error detected.
89c-199	D	89c	Description: Undefined error detected.
89c-211	D	89c	Description: The LED test failed.
89c-281	D	89c	Description: No tone during audio test.
89c-301	G	89c	Description: Errors found during ELA.
89c-302	G	89c B88	Description: Errors found during ELA.

Chapter 35. SRNs 900-001 through xxxxxxx

Note: Some SRNs in this chapter may have 4 rather than 3 digits after the dash (-).

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
900-001	D	900 227 Monitor	Description: ″NO″ to color panel.
900-002	D	900 Monitor	Description: ″NO″ to cursor panel.
900-007	D	Info code	Description: The EMC_SCROLLING_17_H_TEST failed.
900-009	D	Info code	Description: The EMC_SCROLLING_21_H_TEST failed.
900-064	D	900 227	Description: TRIO64V+_TIMEOUT.
900-101	D	900 227	Description: Color miscompare.
900-102	D	900 227	Description: Clipping error.
900-103	D	900 227	Description: Rectangle fill test failed.
900-128	D	software 900	Description: MALLOC_ERROR.
900-161	D	software	Description: Loop count value in rules file is zero.
900-191	D	900 227	Description: Red screen error.
900-193	D	900 227	Description: Green screen error.
900-1FF	D	900 227	Description: Rectangle fill test failed.
900-201	D	900 227	Description: Color miscompare.
900-202	D	900 227	Description: Clipping error.
900-203	D	900 227	Description: Image transfer across Plane Test failed.
900-211	D	software	Description: INTERNAL_ERROR_DATA_SIZE.
900-212	D	software	Description: INTERNAL_ERROR_NO_ACCESS.
900-215	D	900 227	Description: Black screen error.
900-217	D	900 227	Description: 9 x 7 Cross hatch grid failed.
900-233	D	software	Description: OPEN_RCM_ERROR.
900-234	D	software	Description: IOCTL_GSC_HANDLE_FAILED.
900-235	D	software	Description: AIXGSC_MAKE_GP_FAILED.
900-236	D	software	Description: AIXGSC_UNMAKE_GP_FAILED.
900-237	D	software	Description: DEVICE_BUSY_ERROR.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
900-241	D	Info code	Description: The SCROLLING_17_H_TEST failed.
900-263	D	Info code	Description: The EMC_SCROLLING_21_H_TEST failed.
900-2FF	D	900 227	Description: Image transfer across Plane Test failed.
900-301	D	900 227	Description: A write of ″0x00″ to the palette register failed.
900-302	D	900 227	Description: A write of ″0x15″ to the palette register failed.
900-303	D	900 227	Description: A write of ″0x2A″ to the palette register failed.
900-304	D	900 227	Description: A write of ″0x3F″ to the palette register failed.
900-305	D	900 227	Description: The test of the palette registers failed.
900-3FF	D	900 227	Description: The test of the palette registers failed.
900-401	D	900 227	Description: Frame buffer base address inconsistent.
900-402	D	900 227	Description: VRAM inaccessible.
900-403	D	900 227	Description: Miscompare found in VRAM.
900-404	D	900 227	Description: The test of the VRAM failed.
900-447	D	900 227	Description: Green screen error.
900-449	D	900 227	Description: Blue Screen error.
900-471	D	900 227	Description: 9 x 7 Cross hatch grid failed.
900-473	D	900 227	Description: 11 x 9 Cross hatch grid failed.
900-495	D	Info code	Description: The SCROLLING_17_H_TEST failed.
900-497	D	Info code	Description: The SCROLLING_21_H_TEST failed.
900-4FF	D	900 227	Description: The test of the VRAM failed.
900-501	D	900 227	Description: Color miscompare.
900-502	D	900 227	Description: Clipping error.
900-503	D	900 227	Description: Direct Frame Buffer test failed.
900-5FF	D	900 227	Description: Direct Frame Buffer test failed.
900-601	D	900 227	Description: Video Stream Register test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
900-602	D	900 227	Description: Video Stream hardware test failed.
900-6FF	D	900 227	Description: Video Stream hardware test failed.
900-701	D	900 227	Description: 0 Degree Short Stroke Draw failed.
900-702	D	900 227	Description: 45 Degree Short Stroke Draw failed.
900-703	D	900 227	Description: Blue Screen error, or 90 Degree Short Stroke Draw failed.
900-704	D	900 227	Description: 135 Degree Short Stroke Draw failed.
900-705	D	900 227	Description: White screen error, or 180 Degree Short Stroke Draw failed.
900-706	D	900 227	Description: 225 Degree Short Stroke Draw failed.
900-707	D	900 227	Description: 270 Degree Short Stroke Draw failed.
900-708	D	900 227	Description: 315 Degree Short Stroke Draw failed.
900-709	D	900 227	Description: Short Stroke Vector Function test failed.
900-727	D	900 227	Description: 11 x 9 Cross hatch grid failed.
900-750	D	Info code	Description: The SCROLLING_21_H_TEST failed.
900-753	D	Info code	Description: The EMC_SCROLLING_17_H_TEST failed.
900-7FE	D	900 227	Description: Short Stroke Vector Function test failed.
900-7FF	D	software 900 227	Description: Bad vector detected.
900-801	D	900 227	Description: Color for PatBlt thru screen failed.
900-802	D	900 227	Description: Clipping for PatBlt thru screen failed.
900-803	D	900 227	Description: Color for PatBlt Across screen failed.
900-804	D	900 227	Description: Clipping for PatBlt Across screen failed.
900-805	D	900 227	Description: Pattern Fill Across the Plane test failed.
900-8FF	D	900 227	Description: Pattern Fill Across the Plane test failed.
900-901	D	900 227	Description: Color miscompare of white boxes detected.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
900-902	D	900 227	Description: Clipping error of white boxes detected.
900-903	D	900 227	Description: Color miscompare of color bars detected.
900-904	D	900 227	Description: Clipping error of white boxes detected.
900-905	D	900 227	Description: Color miscompare of white boxes detected.
900-906	D	900 227	Description: Clipping error of white boxes detected.
900-907	D	900 227	Description: Color miscompare of white boxes detected.
900-908	D	900 227	Description: Clipping miscompare of white boxes detected.
900-909	D	900 227	Description: The Area fill test (color bars) failed.
900-937	D	900 227	Description: Red screen error.
900-959	D	900 227	Description: White screen error.
900-961	D	900 227	Description: Black screen error.
900-9FF	D	900 227	Description: The Area fill test (color bars) failed.
900-A01	D	900 227	Description: Color miscompare of horizontal top line.
900-A02	D	900 227	Description: Clipping error of horizontal top line.
900-A03	D	900 227	Description: Color miscompare of vertical right line.
900-A04	D	900 227	Description: Clipping error of vertical right line.
900-A05	D	900 227	Description: Color miscompare of horizontal bottom line.
900-A06	D	900 227	Description: Clipping error of horizontal bottom line.
900-A07	D	900 227	Description: Color miscompare of vertical left line.
900-A08	D	900 227	Description: Clipping error of vertical left line.
900-A09	D	900 227	Description: Color miscompare of horizontal center line.
900-A0A	D	900 227	Description: Clipping error of horizontal center line.
900-A0B	D	900 227	Description: Color miscompare of vertical center line.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
900-A0C	D	900 227	Description: Clipping error of vertical center line.
900-A0D	D	900 227	Description: Reserved.
900-A0F	D	900 227	Description: Reserved.
900-A10	D	900 227	Description: Color miscompare of textured top line.
900-A11	D	900 227	Description: Clipping error of textured top line.
900-A12	D	900 227	Description: Line Drawing Function test failed.
900-AFF	D	900 227	Description: Line Drawing Function test failed.
900-B01	D	900 227	Description: Rectangle Area Color miscompare detected.
900-B02	D	900 227	Description: Rectangle Area Clip error detected.
900-B03	D	900 227	Description: Clipped Area Horizontal color miscompare (background line color wrong).
900-B04	D	900 227	Description: Clipped Area Horizontal clip miscompare (clip of background line wrong).
900-B05	D	900 227	Description: Clipped Area Vertical color miscompare (background line color wrong).
900-B06	D	900 227	Description: Clipped Area Vertical clip error (clip of background line wrong).
900-B07	D	900 227	Description: The clipping function test failed.
900-BFF	D	900 227	Description: The clipping function test failed.
900-C01	D	900 227	Description: The BIOS read failed.
900-C02	D	900 227	Description: The BIOS function test failed.
900-CFF	D	900 227	Description: The BIOS function test failed.
900-D01	D	900 227	Description: The HW cursor function test failed.
900-DFF	D	900 227	Description: The HW cursor function test failed.
901-xxx			Description: Vendor SCSI device problem. Refer to the service documentation for this device.
902-xxx			Description: Vendor display problem. Refer to the service documentation for this display.
903-xxx			Description: Vendor Async device problem. Refer to the service documentation for this device.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
904-xxx			Description: Vendor Parallel device problem. Refer to the service documentation for this device.
905-xxx			Description: Vendor device problem. Refer to the service documentation for this device.
908-001 to 908-010	D	908 C33 C48	Description: Invalid function request or bad parameters passed.
908-016 to 908-019	D	908	Description: MCIC failed reading header.
908-020	D	C33 908 C36	Description: Error closing 7250 DD.
908-111	D	908 C33 C36	Description: Loader check sum error.
908-112	D	C33 908 C36 C34	Description: DMA failed to complete a transfer.
908-113	D	908 C33 C36	Description: Errors in loading ASCII registers.
908-114 to 908-118	D	C33 908 C36	Description: Errors in loading ASCII registers.
908-120 to 908-150	D	908 C33 C36	Description: DMA transfer or PFCA data error.
908-151 to 908-158	D	908	Description: SPAN board error.
908-160	D	908 C33 System C36	Description: 7250 is not available.
908-200 to 908-254	D	C33 908 C36	Description: GPSS board failure.
908-255	D	C33 C34 908 C48	Description: CP NMI bus timeout interrupt error.
908-256 to 908-454	D	C33 908 C36	Description: GPSS board failure.
908-455	D	C33 908 C34 C48	Description: CP NMI bus timeout interrupt error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
908-456 to 908-699	D	C33 908 C36	Description: GPSS board failure.
908-700 to 908-766	D	C34 C33 C48	Description: BLT or RATTLER error.
908-767 to 908-769	D	C35 C34 C44	Description: VOO feature error.
908-770 to 908-799	D	C34 C33 C48	Description: RSS BIST failure.
908-800	D	C46 D66	Description: Base 16M CHAP0 SIMM bad.
908-801	D	C45 D66	Description: RSS base 12M CHAP0 SIMM bad (801).
908-802	D	C46 D66	Description: RSS AG 16M CHAP0 SIMM bad (802).
908-803	D	C45 D66	Description: RSS AG 12M CHAP0 SIMM bad (803).
908-804	D	C47 D66	Description: RSS TX 16M CHAP0 SIMM bad (804).
908-805	D	C46 D66	Description: Base 16M CHAP 1 SIMM bad (805).
908-806	D	C45 D66	Description: RSS base 12M CHAP1 SIMM bad (806).
908-807	D	C46 D66	Description: RSS AG 16M CHAP1 SIMM bad (807).
908-808	D	C45 D66	Description: RSS AG 12M CHAP1 SIMM bad (808).
908-809	D	C47 D66	Description: RSS TX 16M CHAP1 SIMM bad (809).
908-810	D	C46 D66	Description: RSS base 16M CHAP2 SIMM bad (810).
908-811	D	C45 D66	Description: RSS base 12M CHAP2 SIMM bad (811).
908-812	D	C46 D66	Description: RSS AG 16M CHAP2 SIMM bad (812).
908-813	D	C45 D66	Description: RSS AG 12M CHAP2 SIMM bad (813).
908-814	D	C47 D66	Description: RSS TX 16M CHAP2 SIMM bad (814).
908-815	D	C46 D66	Description: RSS base 16M CHAP3 SIMM bad (815).
908-816	D	C45 D66	Description: RSS base 12M CHAP3 SIMM bad (816).

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
908-817	D	C46 D66	Description: RSS AG 16M CHAP3 SIMM bad (817).
908-818	D	C45 D66	Description: RSS AG 12M CHAP3 SIMM bad (818).
908-819	D	C47 D66	Description: RSS TX 16M CHAP3 SIMM bad (819).
908-820	D	C46 D66	Description: RSS base 16M CHAP4 SIMM bad (820).
908-821	D	C45 D66	Description: RSS base 12M CHAP4 SIMM bad (821).
908-822	D	C46 D66	Description: RSS AG 16M CHAP4 SIMM bad (822).
908-823	D	C45 D66	Description: RSS AG 12M CHAP4 SIMM bad (823).
908-824	D	C47 D66	Description: RSS TX 16M CHAP4 SIMM bad (824).
908-825	D	C34	Description: RSS error.
908-830 to 908-870	D	C34	Description: Multiple SIMMs failed.
908-871 to 908-899	D	D66	Description: RSS error.
908-900 to 908-966	D	D66 C33 C48	Description: RSS error.
908-967 to 908-969	D	C35 D66 C48	Description: VOO error.
908-970 to 908-999	D	D66 C33 C48	Description: RSS error.
912-XXX to 913-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
914-110	D	914	Description: The **Reserve** command failed.
914-120	D	914	Description: The **Inquiry** command failed.
914-130	D	914 media	Description: The **Load** command failed.
914-135	D	914 media	Description: The **Unload** command failed.
914-140	D	914	Description: The **Mode Select** command failed.
914-150	D	914 media	Description: The **Test Unit Ready** command failed.
914-160	D	914 media	Description: The **Send Diagnostic** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
914-170	D	914 B88 media	Description: The Read, Write and Compare test failed.
914-180	D	914 media	Description: The **Load** command failed.
914-185	D	914 media	Description: The **Unload** command failed.
914-190	D	914	Description: The **Mode Select** command failed.
914-200	D	914 media	Description: The **Test Unit Ready** command failed.
914-210	D	914 B88	Description: The device configuration failed.
914-220	D	914	Description: The **Release** command failed.
914-230	D	914	Description: The **Request Sense** command failed.
914-240	D	914	Description: The **Openx** command failed.
914-300	D	914 software	Description: The device configuration failed.
914-310	D	B88 914 software	Description: SCSI adapter configuration failed.
914-320	G	914 media	Description: Error log analysis indicates a failure.
914-411 to 914-423	D	914 B88 software	Description: A reservation conflict occurred.
914-511 to 914-523	D	914 B88	Description: The drive returned bad or non-extended sense data.
914-611 to 914-623	D	914 B88 software	Description: An adapter or bus I/O error occurred.
914-711 to 914-723	D	914 B88 software	Description: A device timeout error occurred.
915-110	D	915	Description: The **Reserve** command is corrupted.
915-120	D	915	Description: The **Inquiry** command failed.
915-130	D	915 media	Description: The **Load** command failed.
915-135	D	915 media	Description: The **Unload** command failed.
915-140	D	915	Description: The **Mode Select** command failed.
915-150	D	915 media	Description: The **Test Unit Ready** command failed.
915-160	D	915 media	Description: The **Send Diagnostic** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
915-169	D	915 media	Description: The **Send Diagnostic** command failed.
915-170	D	915 B88 media	Description: The Read, Write and Compare test failed.
915-180	D	915 media	Description: The **Load** command failed.
915-185	D	915 media	Description: The **Unload** command failed.
915-190	D	915	Description: The **Mode Select** command failed.
915-200	D	915 media	Description: The **Test Unit Ready** command failed.
915-210	D	915 B88	Description: The device configuration failed.
915-220	D	915	Description: The **Replace** command failed.
915-230	D	915	Description: The **Request Sense** command failed.
915-240	D	915	Description: The **Openx** command failed.
915-300	D	915 software	Description: The device configuration failed.
915-310	D	B88 915 software	Description: SCSI adapter configuration failed.
915-320	G	915 media	Description: Error log analysis indicates a failure.
915-411 to 915-423	D	915 B88 software	Description: A reservation conflict occurred.
915-511 to 915-523	D	915 B88	Description: The drive returned bad or non-extended sense data.
915-611 to 915-623	D	915 B88 software	Description: An adapter or bus I/O error occurred.
915-711 to 915-723	D	915 B88 software	Description: A device timeout error occurred.
917-102	D	917 B88	Description: An unrecoverable media error.
917-104	D	917	Description: The motor failed to restart.
917-105	D	917	Description: The drive did not become ready.
917-106	D	917	Description: The electronics card test failed.
917-108	D	917	Description: The bus test failed.
917-110	D	917	Description: The media format is corrupted.
917-112	D	917	Description: The diagnostic test failed.
917-114	D	917	Description: An unrecoverable hardware error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
917-116	D		Description: A protocol error. Action: Check the levels of the device, adapter, diagnostic software, and application software to ensure they are all compatible. If you do not find a problem, call your support person.
917-117	D	917	Description: A write-protect error occurred.
917-118	D	917 B88	Description: A SCSI command timeout.
917-120	D	917	Description: A SCSI busy or command error.
917-122	D	917	Description: A SCSI reservation conflict error.
917-124	D	917	Description: A SCSI check condition error.
917-126	D	917 B88	Description: A software error was caused by a hardware failure.
917-128	G	917	Description: The error log analysis indicates a hardware failure.
917-129	G	917	Description: Error log analysis indicates a SCSI bus problem.
917-130	G	917 B88	Description: Error log analysis indicates a problem reported by the disk drive's self-monitoring function.
917-132	D	917	Description: A disk drive hardware error occurred.
917-133	D	917	Description: Use the subsystem guide to complete diagnostics.
917-134	D	B88 software	Description: The adapter failed to configure.
917-135	D	917 B88 software	Description: The device failed to configure.
917-136	D	917	Description: The certify operation failed.
917-137	D	917 B88 190	Description: Unit attention condition has occurred on the **Send Diagnostic** command.
917-138	D	190	Description: Error log indicates that the disk is operating at higher than recommended temperatures.
917-139	D	917	Description: Error configuring or opening device. Action: Use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
917-640	G	640	Description: Error Log Analysis indicates a path error.
918-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
921-101	D	821	Description: An unexpected adapter error occurred.
921-102	D	921 821	Description: An unexpected device or adapter error occurred.
921-103	D	921 821	Description: The keyboard reset failed.
921-104	D	921	Description: Unknown keyboard.
921-105	D	921 821	Description: The keyboard light-on test failed.
921-106	D	921 821	Description: The keyboard light-off test failed.
921-201	D	821	Description: An unexpected adapter error occurred.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
921-202	D	921 821	Description: An unexpected device or adapter error occurred.
921-203	D	921 821	Description: The read keyboard ID test failed.
921-204	D	921	Description: The keyboard layout ID test failed.
921-205	D	921 821	Description: The keyboard echo test failed.
921-206	D	921 821	Description: The select scan code set test failed.
921-301	D	821	Description: An unexpected adapter error occurred.
921-302	D	921 821	Description: An unexpected device or adapter error occurred.
921-303	D	921	Description: An error occurred in turning on the lamps.
921-304	D	921	Description: An error occurred in turning off the lamps.
921-401	D	821	Description: An unexpected adapter error occurred.
921-402	D	921 821	Description: An unexpected device or adapter error occurred.
921-403	D	921	Description: Unable to recognize the keyboard.
921-404	D	921 821	Description: The keyboard is failing.
921-501	D	821	Description: An unexpected adapter error occurred.
921-502	D	921 821	Description: An unexpected device or adapter error occurred.
921-503	D	921	Description: The auto-click cannot be disabled.
921-504	D	921	Description: The auto-click cannot be enabled.
921-505	D	921	Description: Unable to recognize the keyboard.
921-601	D	821	Description: An unexpected adapter error occurred.
921-602	D	921 821	Description: An unexpected device or adapter error occurred.
921-603	D	921	Description: The speaker test failed.
921-701	D	921 821	Description: Error configuring the device.
921-901	G	821	Description: The error log analysis indicates an adapter failure.
921-902	G	921 821	Description: The error log analysis indicates a device failure.
921-903	G	921 821	Description: The error log analysis indicates an unknown failure.
922-101	D	821	Description: An unexpected adapter error occurred.
922-102	D	922 821	Description: An unexpected device or adapter error occurred.
922-103	D	922 821	Description: The keyboard reset failed.
922-104	D	922	Description: Unknown keyboard.
922-105	D	922 821	Description: The keyboard light-on test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
922-106	D	922 821	Description: The keyboard light-off test failed.
922-201	D	821	Description: An unexpected adapter error occurred.
922-202	D	922 821	Description: An unexpected device or adapter error occurred.
922-203	D	922 821	Description: The read keyboard id test failed.
922-204	D	922	Description: The keyboard layout id test failed.
922-205	D	922 821	Description: The keyboard echo test failed.
922-206	D	922 821	Description: The select scan code set test failed.
922-301	D	821	Description: An unexpected adapter error occurred.
922-302	D	922 821	Description: An unexpected device or adapter error occurred.
922-303	D	922	Description: An error occurred in turning on the lamps.
922-304	D	922	Description: An error occurred in turning off the lamps.
922-401	D	821	Description: An unexpected adapter error occurred.
922-402	D	922 821	Description: An unexpected device or adapter error occurred.
922-403	D	922	Description: The keyboard is failing.
922-404	D	922 821	Description: Unable to recognize the keyboard.
922-501	D	821	Description: An unexpected adapter error occurred.
922-502	D	922 821	Description: An unexpected device or adapter error occurred.
922-503	D	921	Description: The auto-click cannot be disabled.
922-504	D	922	Description: The auto-click cannot be enabled.
922-505	D	922	Description: Unable to recognize the keyboard.
922-601	D	821	Description: An unexpected adapter error occurred.
922-602	D	922 821	Description: An unexpected device or adapter error occurred.
922-603	D	922	Description: The speaker test failed.
922-701	D	922 821	Description: Error configuring the device.
922-901	G	821	Description: The error log indicates an adapter failed.
922-902	G	922 821	Description: The error log indicates a device failed.
922-903	G	922 821	Description: The error log analysis indicates an unknown failure.
923-101	D	821	Description: An unexpected adapter error occurred.
923-102	D	923 821	Description: An unexpected device or adapter error occurred.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
923-103	D	923 821	Description: The keyboard reset failed.
923-104	D	923	Description: Unknown keyboard.
923-105	D	923 821	Description: The keyboard light-on test failed.
923-106	D	923 821	Description: The keyboard light-off test failed.
923-201	D	821	Description: An unexpected adapter error occurred.
923-202	D	923 821	Description: An unexpected device or adapter error occurred.
923-203	D	923 821	Description: The read keyboard id test failed.
923-204	D	923	Description: The keyboard layout id test failed.
923-205	D	923 821	Description: The keyboard echo test failed.
923-206	D	923 821	Description: The select scan code set test failed.
923-301	D	821	Description: An unexpected adapter error occurred.
923-302	D	923 821	Description: An unexpected device or adapter error occurred.
923-303	D	923	Description: An error occurred in turning on the lamps.
923-304	D	923	Description: An error occurred in turning off the lamps.
923-401	D	821	Description: An unexpected adapter error occurred.
923-402	D	923 821	Description: An unexpected device or adapter error occurred.
923-403	D	923	Description: The keyboard is failing.
923-404	D	923 821	Description: Unable to recognize the keyboard.
923-501	D	821	Description: An unexpected adapter error occurred.
923-502	D	923 821	Description: An unexpected device or adapter error occurred.
923-503	D	923	Description: The auto-click cannot be disabled.
923-504	D	923	Description: The auto-click cannot be enabled.
923-505	D	923	Description: Unable to recognize the keyboard.
923-601	D	821	Description: An unexpected adapter error occurred.
923-602	D	923 821	Description: An unexpected device or adapter error occurred.
923-603	D	923	Description: The speaker test failed.
922-701	D	923 821	Description: Error configuring the device.
923-901	G	821	Description: The error log indicates an adapter failed.
923-902	G	923 821	Description: The error log analysis indicates a device failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
923-903	G	923 821	Description: The error log analysis indicates an unknown failure.
925-111	D	925 823	Description: An unexpected device error occurred.
925-112	D	925 823	Description: The device disable test failed.
925-113	D	925	Description: Could not reset the device.
925-114	D	925 823	Description: The **Read Status** command failed.
925-115	D	925	Description: The device test failed.
925-116	D	925	Description: Unknown Mouse type.
925-117	D	925 823	Description: Mouse wrap mode failed.
925-118	D	925 823	Description: Error setting mouse parameters.
925-121 to 925-171	D	925	Description: The device test failed.
925-200	D	925 823	Description: A software error was caused by a hardware failure.
925-300	G	925	Description: The error log analysis indicates a hardware failure.
925-301	G	925 823	Description: The error log analysis indicates a hardware failure.
926-104	D	926 159	Description: Input device cable is not attached.
926-111	D	824	Description: Adapter error.
926-112 to 926-115	D	926 824	Description: Device, adapter or tablet reset failed.
926-116	D	159	Description: The input device cable is not attached.
926-119	D	188	Description: The input device cable is not attached.
926-121	D	824	Description: Adapter error.
926-131	D	824 926	Description: Adapter error.
926-132 to 926-135	D	926	Description: Device or adapter error.
926-141	D	824 926	Description: Adapter error.
926-142 to 926-161	D	926	Description: Device or adapter error.
926-162	D	159 926	Description: Device or adapter error.
926-163	D	159 926	Description: Error in turning off input device LED.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
926-164	D	159 926	Description: Error in turning off input device LED.
926-165	D	159	Description: The input device cable is not attached.
926-166	D	188 926	Description: Device or adapter error.
926-167	D	188 926	Description: Error in turning off input device LED.
926-168	D	188 926	Description: Error in turning on input device LED.
926-169	D	188	Description: The input device cable is not attached.
926-172	D	159 926	Description: Device or adapter error.
926-173	D	159 926	Description: Error in turning off input device switch.
926-174	D	159 926	Description: Error in turning on input device switch.
926-175	D	159	Description: The input device cable is not attached.
926-176	D	188 926	Description: Device or adapter error.
926-177	D	188 926	Description: Error in turning off input device switch.
926-178	D	188 926	Description: Error in turning on input device switch.
926-179	D	188	Description: The input device cable is not attached.
926-181	D	824 926	Description: Adapter error.
926-182	D	159 926	Description: Device or adapter error.
926-183	D	159 926	Description: Error in incremental data mode test.
926-184	D	159	Description: The input device cable is not attached.
926-186	D	188 926	Description: Device or adapter error.
926-187	D	188 926	Description: The incremental data mode test failed.
926-188	D	188	Description: The input device cable is not attached.
926-203	D	926 824	Description: Error in disabling tablet.
926-204	D	926 824	Description: Error in enabling tablet.
926-207	D	926 824	Description: Enabled/disabled test failed.
926-208	D	926 824	Description: Enabled/disabled test failed.
926-221	D	824	Description: Adapter error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
926-222	D	926 824	Description: Device or adapter error.
926-225	D	159	Description: The input device cable is not attached.
926-229	D	188	Description: The input device cable is not attached.
926-271	D	926	Description: Adapter error.
926-272	D	159 926	Description: Device or adapter error.
926-273	D	159	Description: Error in input device switch test.
926-274	D	159	Description: The input device cable is not attached.
926-276	D	188 926	Description: Device or adapter error.
926-277	D	188 926	Description: Error in input device switch test.
926-278	D	188	Description: Input device cable is not attached.
926-281	D	824 926	Description: Adapter error.
926-282	D	159 926	Description: Device or adapter error.
926-283	D	159 926	Description: Error in incremental data mode test.
926-284	D	159	Description: The input device cable is not attached.
926-286	D	188 926	Description: Device or adapter error.
926-287	D	188 926	Description: Error in incremental data mode test.
926-288	D	188	Description: The input device cable is not attached.
927-104	D	927 159	Description: The input device cable is not attached.
927-111	D	824	Description: Adapter error.
927-112	D	927 824	Description: Device or adapter error.
927-113	D	927 824	Description: Tablet reset failed.
927-114	D	927 824	Description: The read configuration test failed.
927-115	D	927 824	Description: The read status test failed.
927-116	D	159	Description: The input device cable is not attached.
927-119	D	188	Description: The input device cable is not attached.
927-121	D	824	Description: Adapter error.
927-122	D	927 824	Description: Device or adapter error.
927-125	D	927 824	Description: The input device cable is not attached.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
927-131	D	824 927	Description: Adapter error.
927-132	D	927	Description: Device or adapter error.
927-133	D	927	Description: The set conversion mode test failed.
927-134	D	927	Description: The set resolution test failed.
927-135	D	927	Description: The read status test failed.
927-141	D	824 927	Description: Adapter error.
927-142	D	927	Description: Device or adapter error.
927-143	D	927	Description: Error in tablet indicator.
927-161	D	927	Description: Adapter error.
927-162	D	159 927	Description: Device or adapter error.
927-163	D	159 927	Description: Error in turning off input device LED.
927-164	D	159 927	Description: Error in turning on input device LED.
927-165	D	159	Description: The input device cable is not attached.
927-166	D	188 927	Description: Device or adapter error.
927-167	D	188 927	Description: Error in turning off input device LED.
927-168	D	188 927	Description: Error in turning on input device LED.
927-169	D	188	Description: The input device cable is not attached.
927-171	D	927	Description: Adapter error.
927-172	D	159 927	Description: Device or adapter error.
927-173	D	159 927	Description: Error in turning off input device switch.
927-174	D	159 927	Description: Error in turning on input device switch.
927-175	D	159	Description: The input device cable is not attached.
927-176	D	188 927	Description: Device or adapter error.
927-177	D	188 927	Description: Error in turning off input device switch.
927-178	D	188 927	Description: Error in turning on input device switch.
927-179	D	188	Description: The input device cable is not attached.
927-181	D	824 927	Description: Adapter error.
927-182	D	159 927	Description: Device or adapter error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
927-183	D	159 927	Description: Error in incremental data mode test.
927-184	D	159	Description: The input device cable is not attached.
927-186	D	188 927	Description: Device or adapter error.
927-187	D	188 927	Description: Error in incremental data mode test.
927-188	D	188	Description: The input device cable is not attached.
927-203	D	927 824	Description: Error in disabling tablet.
927-204	D	927 824	Description: Error in enabling tablet.
927-221	D	824	Description: Adapter error.
927-222	D	927 824	Description: Device or adapter error.
927-225	D	159	Description: The input device cable is not attached.
927-229	D	188	Description: The input device cable is not attached.
927-271	D	927	Description: Adapter error.
927-272	D	159 927	Description: Device or adapter error.
927-273	D	159 927	Description: Error in input device switch test.
927-274	D	159	Description: The input device cable is not attached.
927-276	D	188 927	Description: Device or adapter error.
927-277	D	188 927	Description: Error in input device switch test.
927-278	D	188	Description: The input device cable is not attached.
927-281	D	824 927	Description: Adapter error.
927-282	D	159 927	Description: Device or adapter error.
927-283	D	159 927	Description: Error in incremental data mode test.
927-284	D	159	Description: The input device cable is not attached.
927-286	D	188 927	Description: Device or adapter error.
927-287	D	188 927	Description: Error in incremental data mode test.
927-288	D	188	Description: The input device cable is not attached.
929-201	D	929	Description: Failed to register input ring.
929-202	D	929	Description: Unable to read event from the device.
929-203	D	929	Description: Unable to communicate with the device.
929-204	D	929	Description: Cannot set the device granularity.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
929-210	D	929	Description: Device or adapter failure.
929-212	D	929	Description: Cannot set the device to HIGH granularity.
929-213	D	929	Description: Cannot set the device to LOW granularity.
929-299	D	software 929	Description: Error unconfiguring the device.
929-301	D	software 929	Description: Error configuring the device.
930-201	D	930	Description: Device or adapter failure.
930-210	G	930	Description: Unable to turn the lights on.
930-220	G	930	Description: Unable to turn the lights off hardware failure.
930-230	D	930	Description: Unable to turn the lights off.
930-241	D	930	Description: Unable to turn a single light-on.
930-242	D	930	Description: Device or adapter failure.
930-243	D	930	Description: Device or adapter failure.
930-261	D	930	Description: Cable test failed.
930-262	D	930	Description: Cable test failed.
930-299	D	software 930	Description: Error unconfiguring the device.
930-301	D	software 930	Description: Error configuring the device.
935-101 to 935-102	D	935 828	Description: The diskette-drive select or deselect test failed.
935-103 to 935-107	D	935 828	Description: The diskette failed.
935-108	D	935	Description: The diskette read test failed.
935-109 to 935-110	D	935 828	Description: The read/write on the diskette drive failed.
935-111 to 935-114	D	935	Description: A diskette drive test failed.
935-115 to 935-121	D	935 828	Description: The diskette drive test failed.
935-122	G	935 828	Description: The error log analysis indicates a hardware failure.
935-123	G	935	Description: The error log analysis indicates a hardware failure.
935-124	D	935 software	Description: Unable to configure the device.
938-101	D	938 227	Description: HIPPI Adapter test failed.
938-104	D	938 227	Description: HIPPI Adapter test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
938-105	D	938 227	Description: HIPPI Adapter test failed.
938-108	D	938 227	Description: HIPPI Adapter test failed.
938-109	D	938 227	Description: HIPPI Adapter test failed.
938-10A	D	938 227	Description: HIPPI Adapter test failed.
938-10B	D	938 227	Description: HIPPI Adapter test failed.
938-10C	D	Wrap- Plug 938	Description: HIPPI Adapter test failed.
938-124	D	938 227	Description: HIPPI Adapter test failed.
938-600	D	938 227 software	Description: HIPPI Adapter test failed.
938-800	D	938 227	Description: HIPPI Adapter test failed.
945-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
946-111	D	946 227	Description: Cannot run the test because the device driver detected a hardware error.
946-114	D	946	Description: The register verification test failed.
946-121	D	946 227	Description: Cannot run the test because the device driver detected a hardware error.
946-122	D	946 227	Description: The data wrap communications test failed.
946-123	D	946 227	Description: The modem control line test failed.
946-131	D	946	Description: Cannot run the test because the device driver detected a hardware error.
946-132	D	946 227	Description: The data wrap communications test failed.
946-133	D	946	Description: The modem control line test failed.
946-161	D	252	Description: Could not do the test because the device driver detected a hardware error.
946-162	D	252	Description: The data wrap communication test failed.
946-163	D	252	Description: The modem control line test failed.
946-171	D	259	Description: Cannot run the test because the device driver detected a hardware error.
946-172	D	259	Description: The data wrap communications test failed.
946-173	D	259	Description: The modem control line test failed.
946-181	D	261	Description: Cannot run the test because the device driver detected a hardware error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
946-182	D	261	Description: The data wrap communications test failed.
946-183	D	261	Description: The modem control line test failed.
946-271	D	946 259	Description: Cannot run the test because the device driver detected a hardware error.
946-272	D	946 259	Description: The data wrap communication test failed.
946-273	D	946 259	Description: The modem control line test failed.
946-281	D	946 261	Description: Cannot run the test because the device driver detected a hardware error.
946-282	D	946 261	Description: The data wrap communications test failed.
946-283	D	946 261	Description: The modem control line test failed.
946-321	D	946	Description: Cannot run the test because the device driver detected a hardware error.
946-322	D	946	Description: The data wrap communications test failed.
946-323	D	946	Description: The modem control line test failed.
946-331	D	946	Description: Cannot run the test because the device driver detected a hardware error.
946-332	D	946	Description: The data wrap communications test failed.
946-333	D	946	Description: The modem control line test failed.
946-371	D	946	Description: Cannot run the test because the device driver detected a hardware error.
946-372	D	946	Description: The data wrap communications test failed.
946-373	D	946	Description: The modem control line test failed.
946-381	D	946	Description: Cannot run the test because the device driver detected a hardware error.
946-382	D	946	Description: The data wrap communications test failed.
946-383	D	946	Description: The modem control line test failed.
946-481	D	D56	Description: Could not do the test because the device driver detected a hardware error.
946-482	D	D56	Description: The data wrap communication test failed.
946-483	D	D56	Description: The modem control line test failed.
946-581	D	946 D56	Description: Could not do the test because the device driver detected a hardware error.
946-582	D	946 D56	Description: The data wrap communication test failed.
946-583	D	946 D56	Description: The modem control line test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
946-901 to 946-920	D	software 946	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 946; otherwise, suspect a software problem.
946-921	D	946 software	Description: The adapter failed to configure.
946-922 to 946-924	D	software 946	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 946; otherwise, suspect a software problem.
946-925	D	946 software	Description: The adapter failed to configure.
946-926 to 946-943	D	software 946	Description: An unexpected error occurred that can be attributed to software or hardware. Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 210 with a FFC of 946; otherwise, suspect a software problem.
747-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
950-100	C	192	Description: Power supply problem. Action: Use the service documentation for the portable disk.
950-101	F	2C9 153	Description: PCI bus was not found. Action: Rerun diagnostics in Advanced Mode for additional problem isolation.
950-102	C	2C9	Description: PCI bus was not found. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-103	C	2C9	Description: Multiple adapters on bus were not found.
950-105	C	2C9 221	Description: PCI bus was not found. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-106	C	2C9	Description: PCI bus was not found. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-107	C	153 165	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-108	C	190 199 153 165	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-200	C	152	Description: Power supply problem. Action: Use the service documentation for the external device.
950-201	C	SCSI Bus	Description: SCSI bus problem. Action: Refer to MAP 2010 in the 7134 High Density SCSI Disk Subsystem Installation and Service Guide.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-400	C	153	Description: Power supply problem. Action: Use the service documentation for the drawer/tower containing the failing power supply. If the drawer/deskside unit service documentation does not isolate the problem, go to MAP 1520 in the system unit installation and service guide.
950-440	C	440 B88 190 199 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-441	C	440 B88 190 199 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-442	C	440 B88 190 199 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-443	C	440 B88 190 199 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-500	C	152	Description: Power supply problem. Action: Use the service documentation for the system unit, rack, or drawer that contains the missing device.
950-56D	C	58D B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-58D	C	58D B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-61D	C	61D B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-638	C	638 B88 277 190 152	Description: The SCSI device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-639	C	639 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-63A	C	63A B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-63B	C	63B B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-63C	C	63C B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-63D	C	63D B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-63E	C	63E B88 277 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-63F	C	63F B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-640	C	640 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-664	C	664 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-678	C	678 B88 190 152	Description: The SCSI Tape Drive is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-679	C	679 B88 190 152	Description: The SCSI Disk Drive is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-681	C	681 2E7 190 152	Description: The SCSI Disk Drive is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-700	C	700 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-701	C	701 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-702	C	702 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-703	C	703 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-704	C	704 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-705	C	705 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-706	C	706 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-707	C	707 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-721	C	721 B88 190 152	Description: An unknown drive type is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-722	C	722 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-723	C	723 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-724	C	724 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-734	C	734 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-741	C	741 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-772	C	772 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-773	C	773 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-789	C	789 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-792	C	792 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-793	C	793 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-804	C	804 B88 190 152	Description: The device is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-912	C	912 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-914	C	914 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-915	C	915 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-917	C	917 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-918	C	918 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-935	C	935 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-936	C	936 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-951	C	951 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-952	C	952 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-953	C	953 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-954	C	954 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-955	C	955 B88 190 141 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-956	C	956 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-959	C	959 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-960	C	960 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-964	C	964 B88 190 152	Description: The SCSI Tape Drive is not responding. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-968	C	968 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-970	C	970 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-971	C	971 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-972	C	972 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-974	C	974 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-981	C	981 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-984	C	984 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-986	C	986 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-987	C	987 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-989	C	989 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-990	C	990 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-991	C	991 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-994	C	994 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
950-995	C	995 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-998	C	998 B88 190 152	Description: Device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105.
950-xxxx	C	xxxx B88 190 152	Description: The device does not respond. Action: Use Chapter 22, "MAP 0291: Missing Device or Bus Problem Resolution", on page 105. **Note:** xxxx corresponds to the last three or four digits of the SRN after the dash (-). If your 950-xxxx SRN is not listed, substitute the last three or four digits of the SRN for xxxx.
951-XXX to 957-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
959-102	D	959	Description: Non-recoverable medium error.
959-104	D	959	Description: Motor failed to restart.
959-105	D	959	Description: The drive did not become ready.
959-106	D	959	Description: Electronics card failure.
959-108	D	959	Description: Bus failure.
959-110	D	959	Description: The media format is corrupted.
959-112	D	959	Description: Diagnostic failure.
959-114	D	959	Description: Non-recoverable hardware error.
959-116	D		Description: A protocol error was detected. Action: Check the levels of the device, adapter, diagnostic and application software, and ensure they are all compatible. If you do not find a problem, call your support person.
959-117	D	959	Description: write-protect error.
959-118	D	959 B88	Description: SCSI command timeout.
959-120	D	959	Description: SCSI busy/command error.
959-122	D	959	Description: SCSI reservation conflict error.
959-124	D	959	Description: SCSI check condition error.
959-126	D	959 B88	Description: Software error caused by hardware failure.
959-128	G	959	Description: Error log analysis indicates hardware failure.
959-129	G	190 959 B88 software	Description: Error log analysis indicates a SCSI bus problem.
959-130	G	959	Description: Error log analysis indicates a problem reported by the disk drive's self-monitoring function.
959-134	D	B88 software	Description: The adapter failed to configure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
959-135	D	959 B88 software	Description: The device failed to configure.
959-136	D	959	Description: The certify operation failed.
959-137	D	959 B88 190	Description: Unit attention condition has occurred on the **Send Diagnostic** command.
960-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
964-101	D	964	Description: Timeout while attempting to communicate with SCSI device.
964-102	D	964	Description: The SCSI device indicates busy.
964-103	D	964	Description: The SCSI device indicates a reservation conflict.
964-104	D	964	Description: The SCSI device indicates a check condition.
964-105	D	964	Description: An error is detected in request sense data.
964-107	D	964	Description: Sense data from the SCSI drive has unexpected data.
964-110	D	964	Description: The **Reserve** command failed.
964-111	D	964	Description: Invalid condition from the drive after a reserve.
964-112	D	964	Description: The write-protect sensor test failed.
964-113	D	964	Description: Invalid condition from drive after a request sense.
964-114	D	964	Description: Timeout while attempting to communicate with the SCSI device.
964-120	D	964	Description: The **Inquiry** command failed.
964-130	D	964 media	Description: The **Load** command failed.
964-134	D	B88 software	Description: The adapter failed to configure.
964-135	D	964 media	Description: The **Unload** command failed.
964-140	D	964	Description: The **Mode Select** command failed.
964-150	D	964 media	Description: The **Test Unit Ready** command failed.
964-160	D	964 media	Description: The **Send Diagnostic** command failed.
964-161	D	964 B88	Description: Invalid condition from the drive after a reserve.
964-163	D	964 B88	Description: Invalid condition from the drive after a request sense.
964-164	D	964 B88	Description: Timeout while attempting to communicate with the SCSI device.
964-165	D	964 B88 276	Description: Write, Read and Compare Test failed.
964-166	D	964 B88 software	Description: Unable to configure the device.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
964-167	D	964 B88	Description: An unexpected SCSI error occurred.
964-168	D	B88 software	Description: The adapter failed to configure.
964-169	D	964 media	Description: The **Send Diagnostic** command failed.
964-170	D	964 B88 media	Description: The Read, Write and Compare test failed.
964-180	D	964 media	Description: The **Load** command failed.
964-185	D	964 media	Description: The **Unload** command failed.
964-190	D	964	Description: The **Mode Select** command failed.
964-200	D	964 media	Description: The **Test Unit Ready** command failed.
964-201	G	964 B88	Description: Error diagnosed from error log analysis.
964-210	D	964 B88	Description: The device configuration failed.
964-211	D	964 B88	Description: The device open failed.
964-220	D	964	Description: The **Release** command failed.
964-230	D	964	Description: The **Request Sense** command failed.
964-240	D	964	Description: The **Openx** command failed.
964-260	D	964	Description: The device configuration failed.
964-261	D	964	Description: The device open failed.
964-300	D	964 software	Description: The device configuration failed.
964-310	D	B88 964 software	Description: SCSI adapter configuration failed.
964-320	G	964 media	Description: Error log analysis indicates a failure.
964-411 to 964-423	D	964 B88 software	Description: A reservation conflict occurred.
964-511 to 964-523	D	964 B88	Description: The drive returned bad or non-extended sense data.
964-611 to 964-623	D	964 B88 software	Description: An adapter or bus I/O error occurred.
964-711 to 964-723	D	964 B88 software	Description: A device timeout error occurred.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
966-101	D	966	Error in non-interactive tests.
966-103	D	966	The test pattern failed.
966-201	D	966 190	Description: Error in non-interactive tests on card.
966-203	D	966 190	Description: The test pattern failed.
966-205	D	966 190	Description: Test pattern failed.
966-207	D	966 190	Description: Test pattern failed.
966-208	D	190	Description: Error in non-interactive test on card.
966-209	D	190	Description: Test pattern failed.
966-211	D	190	Test pattern failed.
966-213	D	190	Test pattern failed.
966-304	D	E22 725 966	Video error in interactive test.
966-306	D	E23 725 966	Audio error in interactive test.
966-310	D	E22 725	Video error in interactive test.
966-312	D	E22 725	Audio error in interactive test.
966-400	D	152 190 E24 166	Error in non-interactive tests.
966-402	D	190 E23 E22	Test pattern failed.
968-XXX			See Chapter 32, “SCSI Devices SRNs”, on page 225.
969-110	G	D67	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
969-111	G	D83	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
969-120	G	D68	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
969-121	G	D84	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.
969-130	G	D69	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, “MAP 0240: Memory Problem Resolution”, on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
969-131	G	D85	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-140	G	D70	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-141	G	D86	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-150	G	E11	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-151	G	E14	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-206	G	D72	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-208	G	D73	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-210	G	D71	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-211	G	D87	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-212	G	E12	Description: Residual Data Analysis indicates memory error.
969-220	G	D72	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-221	G	D88	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-230	G	D73	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-231	G	D89	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-240	G	D74	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-241	G	D90	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-250	G	E12	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
969-251	G	E15	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-310	G	D75	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-311	G	D91	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-320	G	D76	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-321	G	D92	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-330	G	D77	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-331	G	D93	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-340	G	D78	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-341	G	D94	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-350	G	E13	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-351	G	E16	Description: Residual Data Analysis indicates memory error. Action: Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-600	G		Description: Residual Data Analysis indicates memory error or unsupported memory. Action: Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory module(s). Use Chapter 15, "MAP 0240: Memory Problem Resolution", on page 79.
969-701	D	814	Description: NVRAM test failed.
969-702	D	151	Description: Time of Day Battery test failed.
969-703	D	817	Description: Time of Day Chip test failed.
969-800	G	221	Description: Memory problems indicate System Planar failure.
969-900	G	D01	Description: L2 cache test failed.
970-101	D	970	Description: Timeout while attempting to communicate with SCSI device.
970-102	D	970	Description: The SCSI device indicates busy.
970-103	D	970	Description: The SCSI device indicates a reservation conflict.
970-104	D	970	Description: The SCSI device indicates a check condition.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
970-105	D	970	Description: An error is detected in request sense data.
970-107	D	970	Description: Sense data from the SCSI drive has unexpected data.
970-110	D	970	Description: The **Reserve** command failed.
970-111	D	970	Description: Invalid condition from the drive after a reserve.
970-112	D	970	Description: The write-protect sensor test failed.
970-113	D	970	Description: Invalid condition from drive after a request sense.
970-114	D	970	Description: Timeout while attempting to communicate with the SCSI device.
970-120	D	970	Description: The **Inquiry** command failed.
970-130	D	970 media	Description: The **Load** command failed.
970-134	D	B88 software	Description: The adapter failed to configure.
970-135	D	970 media	Description: The **Unload** command failed.
970-140	D	970	Description: The **Mode Select** command failed.
970-150	D	970 media	Description: The **Test Unit Ready** command failed.
970-160	D	970 media	Description: The **Send Diagnostic** command failed.
970-161	D	970 B88	Description: Invalid condition from the drive after a reserve.
970-163	D	970 B88	Description: Invalid condition from the drive after a request sense.
970-164	D	970 B88	Description: Timeout while attempting to communicate with the SCSI device.
970-165	D	970 B88 276	Description: Write, Read and Compare Test failed.
970-166	D	970 B88 software	Description: Unable to configure the device.
970-167	D	970 B88	Description: An unexpected SCSI error occurred.
970-168	D	B88 software	Description: The adapter failed to configure.
970-169	D	970 media	Description: The **Send Diagnostic** command failed.
970-170	D	970 B88 media	Description: The Read, Write and Compare test failed.
970-180	D	970 media	Description: The **Load** command failed.
970-185	D	970 media	Description: The **Unload** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
970-190	D	970	Description: The **Mode Select** command failed.
970-200	D	970 media	Description: The **Test Unit Ready** command failed.
970-201	G	970 B88	Description: Error diagnosed from error log analysis.
970-210	D	970 B88	Description: The device configuration failed.
970-211	D	970 B88	Description: The device open failed.
970-220	D	970	Description: The **Release** command failed.
970-230	D	970	Description: The **Request Sense** command failed.
970-240	D	970	Description: The **Openx** command failed.
970-260	D	970	Description: The device configuration failed.
970-261	D	970	Description: The device open failed.
970-300	D	970 software	Description: The device configuration failed.
970-310	D	B88 970 software	Description: SCSI adapter configuration failed.
970-320	G	970 media	Description: Error log analysis indicates a failure.
970-411 to 970-423	D	970 B88 software	Description: A reservation conflict occurred.
970-511 to 970-523	D	970 B88	Description: The drive returned bad or non-extended sense data.
970-57D	D	57D	Description: The resource does not respond.
970-611 to 970-623	D	970 B88 software	Description: An adapter or bus I/O error occurred.
970-711 to 970-723	D	970 B88 software	Description: A device timeout error occurred.
971-101	D	971	Description: Timeout while attempting to communicate with SCSI device.
971-102	D	971	Description: The SCSI device indicates busy.
971-103	D	971	Description: The SCSI device is indicating a reservation conflict.
971-104	D	971	Description: The SCSI device indicates a check condition.
971-105	D	971	Description: Sense data from the SCSI device shows an error.
971-107	D	971	Description: The SCSI drive returned unexpected sense data.
971-110	D	971	Description: The **Reserve** command failed.
971-111	D	971	Description: Invalid condition from the drive after a reserve.
971-112	D	971	Description: The write-protect sensor test failed.
971-113	D	971	Description: Invalid condition from the drive after a request sense.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
971-114	D	971	Description: Timeout while attempting to communicate with the SCSI device.
971-120	D	971	Description: The **Inquiry** command failed.
971-130	D	971 media	Description: The **Load** command failed.
971-135	D	971 media	Description: The **Unload** command failed.
971-140	D	971	Description: The **Mode Select** command failed.
971-150	D	971 media	Description: The **Test Unit Ready** command failed.
971-160	D	971 media	Description: The **Send Diagnostic** command failed.
971-161	D	971 B88	Description: Invalid condition from the drive after a reserve.
971-163	D	971 B88	Description: Invalid condition from the drive after a request sense.
971-164	D	971 B88	Description: Timeout while attempting to communicate with the SCSI device.
971-165	D	971 B88 276	Description: Write, Read and Compare Test failed.
971-166	D	971 B88 software	Description: Unable to configure the device.
971-167	D	971 B88	Description: An unexpected SCSI error occurred.
971-168	D	B88 software	Description: The adapter failed to configure.
971-169	D	971 media	Description: The **Send Diagnostic** command failed.
971-170	D	971 B88 media	Description: The Read, Write and Compare test failed.
971-180	D	971 media	Description: The **Load** command failed.
971-185	D	971 media	Description: The **Unload** command failed.
971-190	D	971	Description: The **Mode Select** command failed.
971-200	D	971 media	Description: The **Test Unit Ready** command failed.
971-201	G	971 B88	Description: An error is diagnosed from the error log analysis.
971-210	D	971 B88	Description: The device configuration failed.
971-211	D	971 B88	Description: The device open test failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
971-220	D	971	Description: The **Release** command failed.
971-230	D	971	Description: The **Request Sense** command failed.
971-240	D	971	Description: The **Openx** command failed.
971-260	D	971	Description: The device configuration failed.
971-261	D	971	Description: The device open test failed.
971-300	D	971 software	Description: The device configuration failed.
971-310	D	B88 971 software	Description: SCSI adapter configuration failed.
971-320	G	971 media	Description: Error log analysis indicates a failure.
971-411 to 971-423	D	971 B88 software	Description: A reservation conflict occurred.
971-511 to 971-523	D	971 B88	Description: The drive returned bad or non-extended sense data.
971-611 to 971-623	D	971 software	Description: An adapter or bus I/O error occurred.
971-711 to 971-723	D	971 B88 software	Description: A device timeout error occurred.
972-101	D	972	Description: Timeout while attempting to communicate with SCSI device.
972-102	D	972	Description: The SCSI device indicates busy.
972-103	D	972	Description: The SCSI device indicates a reservation conflict.
972-104	D	972	Description: The SCSI device indicates a check condition.
972-105	D	972	Description: An error is detected in request sense data.
972-107	D	972	Description: The drive has returned unexpected sense data.
972-110	D	972	Description: The **Reserve** command failed.
972-111	D	972	Description: Invalid condition from the drive after a reserve.
972-112	D	972	Description: The write-protect sensor test failed.
972-113	D	972	Description: Invalid condition from the drive after a request sense.
972-114	D	972	Description: Timeout while attempting to communicate with the SCSI device.
972-120	D	972	Description: The **Inquiry** command failed.
972-130	D	972 media	Description: The **Load** command failed.
972-135	D	972 media	Description: The **Unload** command failed.
972-140	D	972	Description: The **Mode Select** command failed.
972-150	D	972 media	Description: The **Test Unit Ready** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
972-160	D	972 media	Description: The **Send Diagnostic** command failed.
972-161	D	972 B88	Description: Invalid condition from the drive after a reserve.
972-163	D	972 B88	Description: Invalid condition from the drive after a request sense.
972-164	D	972 B88 276	Description: Timeout while attempting communication with SCSI device.
972-165	D	972 B88 276	Description: Write, Read and Compare Test failed.
972-166	D	972 B88 software	Description: Unable to configure the device.
972-167	D	972 B88	Description: An unexpected SCSI error occurred.
972-168	D	B88 software	Description: The adapter failed to configure.
972-169	D	972 media	Description: The **Send Diagnostic** command failed.
972-170	D	972 B88 media	Description: The Read, Write and Compare test failed.
972-180	D	972 media	Description: The **Load** command failed.
972-185	D	972 media	Description: The **Unload** command failed.
972-190	D	972	Description: The **Mode Select** command failed.
972-200	D	972 media	Description: The **Test Unit Ready** command failed.
972-201	G	972 B88	Description: An error is diagnosed from the error log analysis.
972-210	D	972 B88	Description: The device configuration failed.
972-211	D	972 B88	Description: The device open test failed.
972-220	D	972	Description: The **Release** command failed.
972-230	D	972	Description: The **Request Sense** command failed.
972-240	D	972	Description: The **Openx** command failed.
972-260	D	972	Description: The device configuration test failed.
972-261	D	972	Description: The device open test failed.
972-300	D	972 software	Description: The device configuration failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
972-310	D	B88 972 software	Description: SCSI adapter configuration failed.
972-320	G	972 media	Description: Error log analysis indicates a failure.
972-411 to 972-423	D	972 B88 software	Description: A reservation conflict occurred.
972-511 to 972-523	D	972 B88	Description: The drive returned bad or non-extended sense data.
972-611 to 972-623	D	972 B88 software	Description: An adapter or bus I/O error occurred.
972-711 to 972-723	D	972 B88 software	Description: A device timeout error occurred.
973-110	D	973	Description: The **Reserve** command failed.
973-120	D	973	Description: The **Inquiry** command failed.
973-130	D	973 media	Description: The **Load** command failed.
973-135	D	973 media	Description: The **Unload** command failed.
973-140	D	973	Description: The **Mode Select** command failed.
973-150	D	973 media	Description: The **Test Unit Ready** command failed.
973-160	D	973 media	Description: The **Send Diagnostic** command failed.
973-169	D	973 media	Description: The **Send Diagnostic** command failed.
973-170	D	973 B88 media	Description: The Read, Write and Compare test failed.
973-180	D	973 media	Description: The **Load** command failed.
973-185	D	973 media	Description: The **Unload** command failed.
973-190	D	973	Description: The **Mode Select** command failed.
973-200	D	973 media	Description: The **Test Unit Ready** command failed.
973-210	D	973 B88	Description: The device configuration failed.
973-220	D	973	Description: The **Release** command failed.
973-230	D	973	Description: The **Request Sense** command failed.
973-240	D	973	Description: The **Openx** command failed.
973-300	D	973 software	Description: The device configuration failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
973-310	D	B88 973 software	Description: SCSI adapter configuration failed.
973-320	G	973 media	Description: Error log analysis indicates a failure.
973-411 to 973-423	D	973 B88 software	Description: A reservation conflict occurred.
973-511 to 973-523	D	973 B88	Description: The drive returned bad or non-extended sense data.
973-611 to 973-623	D	973 B88 software	Description: An adapter or bus I/O error occurred.
973-711 to 973-723	D	973 B88 software	Description: A device timeout error occurred.
974-111	D	974 B88	Description: Unable to reserve device.
974-112	D	974 B88	Description: Unable to do configuration.
974-113	D	974 B88	Description: Unable to open the device driver.
974-121	D	974	Description: The CD-ROM drive indicates an error.
974-122	D	974	Description: The CD-ROM drive indicates an error.
974-123	D	974	Description: The CD-ROM drive indicates an error.
974-125	D	974 B88	Description: The CD-ROM drive indicates an error.
974-126	D	974	Description: The CD-ROM drive indicates an error.
974-127	D	974	Description: The CD-ROM drive indicates an error.
974-128	D	974	Description: The CD-ROM drive indicates an error.
974-129	D	974	Description: The CD-ROM drive indicates an error.
974-150	D	Test- Disc 974	Description: A media error was detected.
974-151	D	974 D88	Description: A command timeout was detected.
974-152	D	974	Description: A command reservation conflict was detected.
974-162	D	974	Description: The CD-ROM drive indicates an error.
974-171	D	974	Description: Unable to reserve device.
974-172	D	974	Description: Unable to do configuration.
974-173	D	974	Description: Unable to open device driver.
974-175	D	974	Description: The CD-ROM drive indicates an error.
974-198	D	974 B88	Description: Undefined error detected.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
974-199	D	974	Description: Undefined error detected.
974-211	D	974	Description: The LED test failed.
974-281	D	974	Description: No tone during audio test.
974-301	G	974	Description: Errors found during ELA.
974-302	G	974 B88	Description: Errors log analysis indicates hardware failure.
981-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
984-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
986-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
987-111	D	987 B88	Description: Unable to reserve device.
987-112	D	987 B88	Description: Unable to do configuration.
987-113	D	987 B88	Description: Unable to open the device driver.
987-121	D	987	Description: The CD-ROM drive indicates an error.
987-122	D	987	Description: The CD-ROM drive indicates an error.
987-123	D	987	Description: The CD-ROM drive indicates an error.
987-125	D	987 B88	Description: The CD-ROM drive indicates an error.
987-126	D	987	Description: The CD-ROM drive indicates an error.
987-127	D	987	Description: The CD-ROM drive indicates an error.
987-128	D	987	Description: The CD-ROM drive indicates an error.
987-129	D	987	Description: The CD-ROM drive indicates an error.
987-150	D	Test-Disc 987	Description: A media error was detected.
987-151	D	987 B88	Description: A command timeout was detected.
987-152	D	987	Description: A command reservation conflict was detected.
987-162	D	987	Description: The CD-ROM drive indicates an error.
987-171	D	987	Description: Unable to reserve device.
987-172	D	987	Description: Unable to do configuration.
987-173	D	987	Description: Unable to open device driver.
987-175	D	987	Description: The CD-ROM drive indicates an error.
987-198	D	987 B88	Description: Undefined error detected.
987-199	D	987	Description: Undefined error detected.
987-211	D	987	Description: The LED test failed.
987-281	D	987	Description: No tone during audio test.
987-301	G	987	Description: Errors found during ELA.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
987-302	G	987 B88	Description: Errors found during ELA.
989-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
980-XXX			See Chapter 32, "SCSI Devices SRNs", on page 225.
991-101	D	991	Description: Timeout while attempting to communicate with SCSI device.
991-102	D	991	Description: The SCSI device indicates busy.
991-103	D	991	Description: The SCSI device is indicating a reservation conflict.
991-104	D	991	Description: The SCSI device indicates a check condition.
991-105	D	991	Description: Sense data from the SCSI device shows an error.
991-107	D	991	Description: The SCSI drive returned unexpected sense data.
991-110	D	991	Description: The **Reserve** command failed.
991-111	D	991	Description: Invalid condition from the drive after a reserve.
991-112	D	991	Description: The write-protect sensor test failed.
991-113	D	991	Description: Invalid condition from the drive after a request sense.
991-114	D	991	Description: Timeout while attempting to communicate with the SCSI device.
991-120	D	991	Description: The **Inquiry** command failed.
991-130	D	991 media	Description: The **Load** command failed.
991-135	D	991 media	Description: The **Unload** command failed.
991-140	D	991	Description: The **Mode Select** command failed.
991-150	D	991 media	Description: The **Test Unit Ready** command failed.
991-160	D	991 media	Description: The **Send Diagnostic** command failed.
991-161	D	991 B88	Description: Invalid condition from the drive after a reserve.
991-163	D	991 B88	Description: Invalid condition from the drive after a request sense.
991-164	D	991 B88	Description: Timeout while attempting to communicate with the SCSI device.
991-165	D	991 B88 276	Description: Write, Read and Compare Test failed.
991-166	D	991 B88 software	Description: The device failed to configure.
991-167	D	991 B88	Description: An unexpected SCSI error occurred.
991-168	D	B88 software	Description: The adapter failed to configure.
991-169	D	991 media	Description: The **Send Diagnostic** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
991-170	D	991 B88 media	Description: The Read, Write and Compare test failed.
991-180	D	991 media	Description: The **Load** command failed.
991-185	D	991 media	Description: The **Unload** command failed.
991-190	D	991	Description: The **Mode Select** command failed.
991-200	D	991 media	Description: The **Test Unit Ready** command failed.
991-201	G	991 B88	Description: An error is diagnosed from the error log analysis.
991-210	D	991 B88	Description: The device configuration failed.
991-211	D	991 B88	Description: The device open test failed.
991-220	D	991	Description: The **Release** command failed.
991-230	D	991	Description: The **Request Sense** command failed.
991-240	D	991	Description: The **Openx** command failed.
991-260	D	991	Description: The device configuration failed.
991-261	D	991	Description: The device open test failed.
991-300	D	991 software	Description: The device configuration failed.
991-310	D	B88 991 software	Description: SCSI adapter configuration failed.
991-320	G	991 media	Description: Error log analysis indicates a failure.
991-411 to 991-423	D	991 B88 software	Description: A reservation conflict occurred.
991-511 to 991-523	D	991 B88	Description: The drive returned bad or non-extended sense data.
991-611 to 991-623	D	991 B88 software	Description: An adapter or bus I/O error occurred.
991-711 to 991-723	D	991 B88 software	Description: A device timeout error occurred.
994-110	D	994	Description: The **Reserve** command failed.
994-120	D	994	Description: The **Inquiry** command failed.
994-130	D	994 media	Description: The **Load** command failed.
994-135	D	994 media	Description: The **Unload** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
994-140	D	994	Description: The **Mode Select** command failed.
994-150	D	994 media	Description: The **Test Unit Ready** command failed.
994-160	D	994 media	Description: The **Send Diagnostic** command failed.
994-169	D	994 media	Description: The **Send Diagnostic** command failed.
994-170	D	994 B88 media	Description: The Read, Write and Compare test failed.
994-180	D	994 media	Description: The **Load** command failed.
994-185	D	994 media	Description: The **Unload** command failed.
994-190	D	994	Description: The **Mode Select** command failed.
994-200	D	994 media	Description: The **Test Unit Ready** command failed.
994-210	D	994 B88	Description: The device configuration failed.
994-220	D	994	Description: The **Release** command failed.
994-230	D	994	Description: The **Request Sense** command failed.
994-240	D	994	Description: The **Openx** command failed.
994-300	D	994 software	Description: The device configuration failed.
994-310	D	B88 994 software	Description: SCSI adapter configuration failed.
994-320	G	994 media	Description: Error log analysis indicates a failure.
994-411 to 994-423	D	994 B88 software	Description: A reservation conflict occurred.
994-511 to 994-523	D	994 B88	Description: The drive returned bad or non-extended sense data.
994-611 to 994-623	D	994 B88 software	Description: An adapter or bus I/O error occurred.
994-711 to 994-723	D	994 B88 software	Description: A device timeout error occurred.
995-110	D	995	Description: The **Reserve** command failed.
995-120	D	995	Description: The **Inquiry** command failed.
995-130	D	995 media	Description: The **Load** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
995-135	D	995 media	Description: The **Unload** command failed.
995-140	D	995	Description: The **Mode Select** command failed.
995-150	D	995 media	Description: The **Test Unit Ready** command failed.
995-160	D	995 media	Description: The **Send Diagnostic** command failed.
995-169	D	995 media	Description: The **Send Diagnostic** command failed.
995-170	D	995 B88 media	Description: The Read, Write and Compare test failed.
995-180	D	995 media	Description: The **Load** command failed.
995-185	D	995 media	Description: The **Unload** command failed.
995-190	D	995	Description: The **Mode Select** command failed.
995-200	D	995 media	Description: The **Test Unit Ready** command failed.
995-210	D	995 B88	Description: The device configuration failed.
995-220	D	995	Description: The **Release** command failed.
995-230	D	995	Description: The **Request Sense** command failed.
995-240	D	995	Description: The **Openx** command failed.
995-300	D	995 software	Description: The device configuration failed.
995-310	D	B88 995 software	Description: SCSI adapter configuration failed.
995-320	G	995 media	Description: Error log analysis indicates a failure.
995-411 to 995-423	D	995 B88 software	Description: A reservation conflict occurred.
995-511 to 995-523	D	995 B88	Description: The drive returned bad or non-extended sense data.
995-611 to 995-623	D	995 B88 software	Description: An adapter or bus I/O error occurred.
995-711 to 995-723	D	995 B88 software	Description: A device timeout error occurred.
998-110	D	998	Description: The **Reserve** command failed.
998-120	D	998	Description: The **Inquiry** command failed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
998-130	D	998 media	Description: The **Load** command failed.
998-135	D	998 media	Description: The **Unload** command failed.
998-140	D	998	Description: The **Mode Select** command failed.
998-150	D	998 media	Description: The **Test Unit Ready** command failed.
998-160	D	998 media	Description: The **Send Diagnostic** command failed.
998-169	D	998 media	Description: The **Send Diagnostic** command failed.
998-170	D	998 B88 media	Description: The Read, Write and Compare test failed.
998-180	D	998 media	Description: The **Load** command failed.
998-185	D	998 media	Description: The **Unload** command failed.
998-190	D	998	Description: The **Mode Select** command failed.
998-200	D	998 media	Description: The **Test Unit Ready** command failed.
998-210	D	998 B88	Description: The device configuration failed.
998-220	D	998	Description: The **Release** command failed.
998-230	D	998	Description: The **Request Sense** command failed.
998-240	D	995	Description: The **Openx** command failed.
998-300	D	995 software	Description: The device configuration failed.
998-310	D	B88 995 software	Description: SCSI adapter configuration failed.
998-320	G	995 media	Description: Error log analysis indicates a failure.
998-411 to 998-423	D	998 B88 software	Description: A reservation conflict occurred.
998-511 to 998-523	D	998 B88	Description: The drive returned bad or non-extended sense data.
998-611 to 998-623	D	998 B88 software	Description: An adapter or bus I/O error occurred.
998-711 to 998-723	D	998 B88 software	Description: A device timeout error occurred.
999-xxx series	D	999	Description: A 7137 or 3514 disk array subsystem problem is indicated. Action: Use 7137 or 3514 documentation.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
9CC-1xx	G		Description: I/O Error on PCI bus. Action: Refer to the Bus SRN to FRU Reference Table in the system unit’s service guide. **Note:** xx represents the last 2 digits of the SRN.
9CC-xxx	G	xxx 2C9	Description: I/O Bus Data, Address Parity Error, or Time-out error. **Note:** xxx represents the last 3 digits of the SRN.
xxxxxx	G	none	Description: You have a six-digit error code (like an SRN) containing no dash (-) between the third and fourth digits. Action: Use the ″Error Code to FRU Index″ in the service guide.
xxxxxxxx	G	none	Description: Refer to the Error Code to FRU Index in the system unit’s service guide. Action: Use the ″Error Code to FRU Index″ in the service guide.

Chapter 36. SRNs A00-(x)xxx through A1D-(x)xxx

The **x** in the following group of SRNs is encoded as follows:

```
8  4  2  1
|  |  |  |
|  |  |  Replace all FRUs listed
|  |  Hot swap supported
|  Software might be the cause
Reserved
```

Note: Some SRNs in this chapter may have 4 rather than 3 digits after the dash (-).

Use the physical location codes and FRU numbers listed on the diagnostics Problem Report Screen.Failing Function Codes (FFCs) are not used in this group of SRNs. For more detailed information refer to Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A00-FF0	G		Description: Error log analysis is unable to determine the error. The error log indicates the following physical FRU locations as the probable causes. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-00x	G		Description: Error log analysis indicates an error detected by the CPU, but the failure could not be isolated. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-01x	G		Description: CPU internal error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-02x	G		Description: CPU internal cache or cache controller error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-03x	G		Description: External cache parity or multi-bit ECC error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-04x	G		Description: External cache ECC single-bit error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-05x	G		Description: System bus time-out error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-06x	G		Description: Time-out error waiting for I/O. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-07x	G		Description: System bus parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A01-08x	G		Description: System bus protocol/transfer error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-00x	G		Description: Error log analysis indicates an error detected by the memory controller, but the failure could not be isolated. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-01x	G		Description: Uncorrectable Memory Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A02-02x	G		Description: ECC correctable error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-03x	G		Description: Correctable error threshold exceeded. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-04x	G		Description: Memory Control subsystem internal error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-05x	G		Description: Memory Address Error (invalid address or access attempt). Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-06x	G		Description: Memory Data error (Bad data going to memory). Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-07x	G		Description: Memory bus/switch internal error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-08x	G		Description: Memory time-out error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-09x	G		Description: System bus parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-10x	G		Description: System bus time-out error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-11x	G		Description: System bus protocol/transfer error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-12x	G		Description: I/O Host Bridge time-out error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-13x	G		Description: I/O Host Bridge address/data parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-15x	G		Description: System support function error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A02-16x	G		Description: System bus internal hardware/switch error.
A03-00x	G		Description: Error log analysis indicates an error detected by the I/O device, but the failure could not be isolated. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-01x	G		Description: I/O Bus Address parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-02x	G		Description: I/O Bus Data parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-03x	G		Description: I/O bridge/device time-out, access or other error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-04x	G		Description: I/O bridge/device internal error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-05x	G		Description: I/O Error on non-PCI bus. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A03-06x	G		Description: Mezzanine bus address parity error.
A03-07x	G		Description: System bus address parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-08x	G		Description: Mezzanine bus data parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-09x	G		Description: System bus data parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-10x	G		Description: Mezzanine bus time-out, transfer or protocol error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-11x	G		Description: System bus time-out error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-12x	G		Description: Error on System bus. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-13x	G		Description: I/O Expansion bus parity error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-14x	G		Description: I/O Expansion bus time-out error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-15x	G		Description: I/O Expansion bus connection failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A03-16x	G		Description: I/O Expansion unit not in an operating state. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-00x	G		Description: Error log analysis indicates an environmental and power warning, but the failure could not be isolated. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-01x	G		Description: Sensor indicates a fan has failed. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-02x	G		Description: System shutdown due to a fan failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-03x	G		Description: Sensor indicates a voltage outside normal range. Action: Use MAP 1520 in the service guide.
A05-04x	G		Description: System shutdown due to voltage outside normal range. Action: Use MAP 1520 in the service guide.
A05-05x	G		Description: Sensor indicates an abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A05-06x	G		Description: System shutdown due to abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-07x	G		Description: Sensor indicates a power supply has failed. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-08x	G		Description: System shutdown due to power supply failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-09x	G		Description: Sensor detected a FRU that has failed. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-10x	G		Description: System shutdown due to FRU that has failed. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-14x	G		Description: System shutdown due to power fault with an unspecified cause. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-16x	G		Description: System shutdown due to internal power supply failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-19x	G		Description: System shutdown due to Fan failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-21x	G		Description: System shutdown due to Over temperature condition. Action: Verify the following: • The room ambient temperature is within the system operating environment. • There is unrestricted air flow around the system. • All system covers are closed. If all conditions are met, then use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-22x	G		Description: System shutdown due to over temperature and fan failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A05-24x	G		Description: Power Fault specifically due to internal battery failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-00x	G		Description: Error log analysis indicates an error detected by the Service Processor, but the failure could not be isolated. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A0D-01x	G		**Note:** Ensure that the system IPLROS and Service Processor are at the latest firmware level before removing any parts from the system. Description: Time-out communication response from Service Processor. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-02x	G		Description: I/O (I2C) general bus error. **Note:** If you are servicing a 9076/Nxx system, go to the Service Processor Error Log (SVP). Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-03x	G		Description: Secondary I/O (I2C) general bus error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-04x	G		Description: Internal Service Processor memory error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-05x	G		Description: Service Processor error accessing special registers. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-06x	G		Description: Service Processor reports unknown communication error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-07x	G		Description: Internal service processor firmware error or incorrect version. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-08x	G		Description: Other internal Service Processor hardware error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-09x	G		Description: Service Processor error accessing Vital Product Data EEPROM. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-10x	G		Description: Service Processor error accessing Operator Panel. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-11x	G		Description: Service Processor error accessing Power Controller. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-12x	G		Description: Service Processor error accessing Fan Sensor. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-13x	G		Description: Service Processor error accessing Thermal Sensor. **Note:** If you are servicing a 9076/Nxx system, go to the Service Processor Error Log (SVP).Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-14x	G		Description: Service Processor error accessing Voltage Sensor. **Note:** If you are servicing a 9076/Nxx system, go to the Service Processor Error Log (SVP).Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-17x	G		Description: Service Processor error accessing serial port. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A0D-18x	G		Description: Service Processor detected NVRAM error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-19x	G		Description: Service Processor error accessing Real Time Clock/Time-of-Day Clock. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-20x	G		Description: Service Processor error accessing scan controller/hardware. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-21x	G		Description: Service Processor detect error with Time-of-Day Clock backup battery. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-23x	G		Description: Loss of heart beat from Service Processor. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-24x	G		Description: Service Processor detected a surveillance time-out. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-25x	G		Description: Power Control Network general connection failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-26x	G		Description: Power Control Network node failure. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-29x	G		Description: Service Processor error accessing Power Control Network. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-30x	G		Description: Non-supported hardware. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-31x	G		Description: Error detected while handling an attention/interrupt from the system hardware. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-33x	G		Description: Array of Logic Built in Self Test Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-34x	G		Description: Wire Test Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-35x	G		Description: Mainstore or Cache IPL Diagnostic Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-36x	G		Description: Other IPL Diagnostic Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-37x	G		Description: Clock or PLL Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-38x	G		Description: Hardware Scan or Initialization Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A0D-39x	G		Description: Chip ID Verification Error. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A0D-40x	G		Description: FRU Presence/Detect Error (Mis-Plugged). Action: UseChapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A10-100	E		Description: The resource is unavailable due to an error. System is operating in degraded mode. Action: Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A10-200	E		Description: The resource was marked failed by the platform. The system is operating in degraded mode. Action: Schedule maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A10-210	D		Description: The processor has been deconfigured. The system is operating in degraded mode. Action: Schedule maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-00x	G		Description: A non-critical error has been detected. Error log analysis indicates an error detected by the CPU, but the failure could not be isolated. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-01x	G		Description: A non-critical error has been detected, a CPU internal error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-02x	G		Description: A non-critical error has been detected, a CPU internal cache or cache controller error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-03x	G		Description: A non-critical error has been detected, an external cache parity or multi-bit ECC error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-04x	G		Description: A non-critical error has been detected, an external cache ECC single-bit error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-05x	G		Description: A non-critical error has been detected, a system bus time-out error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-06x	G		Description: A non-critical error has been detected, a time-out error waiting for an I/O device. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-07x	G		Description: A non-critical error has been detected, a system bus parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-08x	G		Description: A non-critical error has been detected, a system bus protocol/transfer error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A11-50x	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-510	G		Description: Resource has been deconfigured and is no longer in use due to a trend toward an unrecoverable error. Action: The system is operating in a degraded mode. Schedule maintenance. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-520	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: Try removing the processes from the failing processor and retry the deconfiguration, use the **ha_star -C** command. An alternative is reboot, and the processor will be deconfigured. Then the system can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-530	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Run-time processor deconfiguration can be enabled to deconfigure the processor. Action: To enable run-time processor deconfiguration, use the **chdev -a cpuguard=enable -l sys0** command. Then to retry the deconfiguration, use the **ha_star -C** command. An alternative is reboot, and the processor will be deconfigured. Then the system can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-540	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-550	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A11-560	G		Description: Recoverable errors on a resource indicate a potential for unrecoverable errors. The resource cannot be deconfigured and is still in use. The problem may be corrected by array bit steering. Use Chapter 14, “MAP 0235: System Array Self-Repair Problem Resolution”, on page 77.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A11-570	G		Description: A processor has been deconfigured due to a trend toward an unrecoverable error. The system is operating in a degraded mode. The problem may be corrected by array bit steering. Use Chapter 14, “MAP 0235: System Array Self-Repair Problem Resolution”, on page 77.
A11-580	G		Description: Recoverable errors on a processor indicate a potential for an unrecoverable error. The resource cannot be deconfigured and is still in use. The problem may be corrected by array bit steering. Use Chapter 14, “MAP 0235: System Array Self-Repair Problem Resolution”, on page 77.
A12-00x	G		Description: A non-critical error has been detected. Error log analysis indicates an error detected by the memory controller, but the failure could not be isolated. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-01x	G		Description: A non-critical error has been detected, an uncorrectable memory error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-02x	G		Description: A non-critical error has been detected, an ECC correctable error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-03x	G		Description: A non-critical error has been detected, a correctable error threshold exceeded. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-04x	G		Description: A non-critical error has been detected, a memory control subsystem internal error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-05x	G		Description: A non-critical error has been detected, a memory address error (invalid address or access attempt). Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-06x	G		Description: A non-critical error has been detected, a memory data error (bad data going to memory). Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-07x	G		Description: A non-critical error has been detected, a memory bus/switch internal error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-08x	G		Description: A non-critical error has been detected, a memory time-out error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-09x	G		Description: A non-critical error has been detected, a system bus parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A12-10x	G		Description: A non-critical error has been detected, a system bus time-out error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-11x	G		Description: A non-critical error has been detected, a system bus protocol/transfer error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-12x	G		Description: A non-critical error has been detected, an I/O host bridge time-out error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-13x	G		Description: A non-critical error has been detected, a I/O host bridge address/data parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-15x	G		Description: A non-critical error has been detected, a system support function error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-16x	G		Description: A non-critical error has been detected, a system bus internal hardware/switch error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A12-50x	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-00x	G		Description: A non-critical error has been detected, a error log analysis indicates an error detected by the I/O device, but the failure could not be isolated. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-01x	G		Description: A non-critical error has been detected, an I/O bus address parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-02x	G		Description: A non-critical error has been detected, an I/O bus data parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-03x	G		Description: A non-critical error has been detected, an I/O bus time-out, access or other error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-04x	G		Description: A non-critical error has been detected, an I/O bridge/device internal error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A13-05x	G		Description: A non-critical error has been detected, an I/O error on non-PCI bus. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-06x	G		Description: A non-critical error has been detected, a mezzanine bus address parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-07x	G		Description: A non-critical error has been detected, a system bus address parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-08x	G		Description: A non-critical error has been detected, a mezzanine bus data parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-09x	G		Description: A non-critical error has been detected, a system bus data parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-10x	G		Description: A non-critical error has been detected, a mezzanine bus time-out error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-11x	G		Description: A non-critical error has been detected, a system bus time-out error Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-12x	G		Description: A non-critical error has been detected, an error on system bus. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-13x	G		Description: A non-critical error has been detected, an I/O expansion bus parity error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-14x	G		Description: A non-critical error has been detected, an I/O expansion bus time-out error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-15x	G		Description: A non-critical error has been detected, an I/O expansion bus connection failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A13-16x	G		Description: A non-critical error has been detected, an I/O expansion unit not in an operating state. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A13-50x	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-01x	G		Description: Sensor indicates a fan is turning too slowly. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-03x	G		Description: Sensor indicates a voltage outside normal range. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-05x	G		Description: Sensor indicates an abnormally high internal temperature. Action: Verify that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures. If none of these problems exist, then proceed with Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-07x	G		Description: Sensor indicates a power supply has failed. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-09x	G		Description: Sensor indicates a FRU has failed. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-11x	G		Description: Sensor detected a redundant fan failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-12x	G		Description: Sensor detected redundant power supply failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-13x	G		Description: Sensor detected a redundant FRU that has failed. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-14x	G		Description: Power fault due to unspecified cause. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-16x	G		Description: Internal power supply failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-17x	G		Description: Internal redundant power supply failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A15-19x	G		Description: Fan failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-20x	G		Description: Non-critical cooling problem, loss of redundant fan. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-21x	G		Description: Over temperature condition. Action: Verify the following: • The room ambient temperature is within the system operating environment. • There is unrestricted air flow around the system. • All system covers are closed. If all conditions are met, then use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-22x	G		Description: Fan failure and Over temperature condition. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-23x	G		Description: Non-critical power problem, loss of redundant power supply. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-24x	G		Description: Power Fault specifically due to internal battery failure. Action: Schedule deferred maintainence. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A15-50x	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-00x	G		Description: A non-critical error has been detected. Error log analysis indicates an error detected by the Service Processor, but the failure could not be isolated. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-01x	G		**Note:** Ensure that the system IPLROS and Service Processor are at the latest firmware level before removing any parts from the system. Description: A non-critical error has been detected. Time Out communication response from Service Processor Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-02x	G		Description: A non-critical error has been detected, an I/O (I2C) general bus error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-03x	G		Description: A non-critical error has been detected, a secondary I/O (I2C) general bus error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A1D-04x	G		Description: A non-critical error has been detected, an internal service processor memory error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-05x	G		Description: A non-critical error has been detected, a service processor error accessing special registers. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-06x	G		Description: A non-critical error has been detected, a service processor reports unknown communication error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-07x	G		Description: A non-critical error has been detected,: Internal service processor firmware error or incorrect version. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-08x	G		Description: A non-critical error has been detected, an other internal service processor hardware error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-09x	G		Description: A non-critical error has been detected, a service processor error accessing vital product data EEPROM. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-10x	G		Description: A non-critical error has been detected, a service processor error accessing operator panel. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-11x	G		Description: A non-critical error has been detected, a service processor error accessing power controller. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-12x	G		Description: A non-critical error has been detected, a service processor error accessing fan sensor. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-13x	G		Description: A non-critical error has been detected, a service processor error accessing a thermal sensor. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-14x	G		Description: A non-critical error has been detected, a service processor error accessing voltage sensor. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-17x	G		Description: A non-critical error has been detected, a service processor error accessing serial port. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A1D-18x	G		Description: A non-critical error has been detected, a service processor detected NVRAM error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-19x	G		Description: A non-critical error has been detected, a service processor error accessing real time clock/time-of-day clock. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-20x	G		Description: A non-critical error has been detected: Service processor error accessing scan controller/hardware. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-21x	G		Description: A non-critical error has been detected, a service processor detected error with time-of-day clock backup battery. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-23x	G		Description: A non-critical error has been detected: Loss of heart beat from Service Processor. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-24x	G		Description: A non-critical error has been detected, a service processor detected a surveillance time-out. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-25x	G		Description: A non-critical error has been detected, a power control network general connection failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-26x	G		Description: A non-critical error has been detected, a power control network node failure. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-29x	G		Description: A non-critical error has been detected, a service process error accessing power control network. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-30x	G		Description: A non-critical error has been detected: Non-supported hardware. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-31x	G		Description: A non-critical error has been detected: Error detected while handling an attention/interrupt from the system hardware. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-33x	G		Description: A non-critical error has been detected: Array of Logic Built in Self Test Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-34x	G		Description: A non-critical error has been detected: Wire Test Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.

Service Request Number	SRN Src.	Failing Function Code	Description and Action
A1D-35x	G		Description: A non-critical error has been detected: Mainstore or Cache IPL Diagnostic Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-36x	G		Description: A non-critical error has been detected: Other IPL Diagnostic Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-37x	G		Description: A non-critical error has been detected: Clock or PLL Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-38x	G		Description: A non-critical error has been detected: Hardware Scan or Initialization Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-39x	G		Description: A non-critical error has been detected: Chip ID Verification Error. Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-40x	G		Description: A non-critical error has been detected: Presence/Detect Error (Mis-Plugged). Action: Schedule deferred maintenance. Use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A1D-50x	G		Description: Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error. Action: If repair is not immediately available, reboot and the resource will be deconfigured. Then operations can continue in a degraded mode. To repair use Chapter 13, “MAP 0230: Platform Error Problem Resolution”, on page 69.
A22-xxxx	C	xxxx	Defective Multipath I/O Device. **Note:** To obtain the FFC, substitute the last 3 or 4 digits after the dash (-) for xxxx (The substituted xxxx is the FFC).
A23-001	C		Multipath I/O Problem Resolution. Action: Go to Chapter 20, “MAP 0285: Multipath I/O (MPIO) Problem Resolution”, on page 97.

Chapter 37. SRNs 2520-101 through 25D0-(x)xxx

Replace FRU parts in the order by which the ″Failing Function Codes″ are listed.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, “MAP 0210: General Problem Resolution”, on page 55.)
2520-101	D	221	Description: Enhanced error handling failure on the bus.
2520-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
2520-103	D	2520 221	Description: Enhanced error handling failure on the adapter.
2520-212	D	2520	Description: FIFO empty bit set.
2520-213	D	2520	Description: FIFO empty bit clear.
2520-214	D	2520	Description: FIFO full bit set.
2520-215	D	2520	Description: FIFO full bit clear.
2520-216	D	2520	Description: FIFO data miscompare.
2520-217	D	2520	Description: SCSI FIFO data miscompare.
2520-218	D	2520	Description: SCSI FIFO underflow.
2520-219	D		Description: SCSI parity error. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-220	D	2520	Description: SCSI FIFO flags error.
2520-221	D	2520 293	Description: Miscompare during the write/read of configuration register.
2520-222	D	2520	Description: Error during the write/read of the memory register.
2520-223	D		Description: Miscompare during the write/read of the memory I/O register. Action: Go to Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-224	D	2520 221	Description: SCSI configuration read or write error.
2520-226	D	2520	Description: SCSI wrap or PTC error.
2520-227	D	2520 221	Description: SCSI adapter interrupt test failure.
2520-230	D		Description: Arbitration test failed. Action: Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-231	D		Description: Function could not complete. Action: Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-232	D		Description: SCSI bus data miscompare. Action: Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-240	D		Description: No terminal power. Action: Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-242	D		Description: SCSI bus error. Action: Use Chapter 8, “MAP 0050: SCSI Bus Problems”, on page 43.
2520-301	D	2520 221	Description: Configuration open failed for parent bus.
2520-801	G		Description: Error Log Analysis indicates a terminator problem. Action: Run diagnostic on the adapter in System Verification Mode. If an SRN is reported, use the SRN to resolve the problem. If a SRN is not reported, use the SCSI service hints to resolve the problem.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2520-802	G		Description: Error Log Analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run diagnostic on the adapter in System Verification Mode. If an SRN is reported, use the SRN to resolve the problem. If a SRN is not reported, use the SCSI service hints to resolve the problem.
2520-803	G		Description: Error Log Analysis indicates that multiple SCSI bus errors have occurred. Action: Run diagnostic on the adapter and the devices in System Verification Mode. If an SRN is reported, use the SRN to resolve the problem. If a SRN is not reported, use the SCSI service hints to resolve the problem.
2521-101	D	221	Description: Enhanced error handling failure on the bus.
2521-102	D	293	Description: Enhanced error handling failure on a PCI-PCI Bridge.
2521-103	D	2521 221	Description: Enhanced error handling failure on the adapter.
2521-227	D	2521 221	Description: SCSI adapter test failure.
2521-701	G	2521	Description: Error log analysis indicates a PCI SCSI adapter failure.
2521-801	G		Description: Error Log Analysis indicates a terminator problem. Action: Run diagnostic on the adapter in System Verification Mode. If an SRN is reported, use the SRN to resolve the problem. If a SRN is not reported, use the SCSI service hints to resolve the problem.
2521-802	G		Description: Error Log Analysis indicates that multiple attempts to reset the SCSI bus have timed out. Action: Run diagnostic on the adapter in System Verification Mode. If an SRN is reported, use the SRN to resolve the problem. If a SRN is not reported, use the SCSI service hints to resolve the problem.
2521-803	G		Description: Error Log Analysis indicates that multiple SCSI bus errors have occurred. Action: Run diagnostic on the adapter and the devices in System Verification Mode. If an SRN is reported, use the SRN to resolve the problem. If a SRN is not reported, use the SCSI service hints to resolve the problem.
2522-101	D	2522	Description: Adapter configuration error.
2522-701	G	2522	Description: Error Log Analysis indicates adapter hardware error.
2522-702	G		Description: Error Log Analysis indicates SCSI device error. Action: Use Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2522-703	G	2522 221	Description: Error Log Analysis indicates hardware system error due to EEH reset problem.
2522-704	G	2522 221	Description: Error Log Analysis indicates hardware system error from EEH event.
2522-705	G	2522 221	Description: Error Log Analysis indicates PCI bus error.
2522-706	G	2522	Description: Error Log Analysis indicates adapter hardware error.
2522-707	G	2522 221	Description: Error Log Analysis indicates PCI bus error.
2522-708	G	2522	Description: Error Log Analysis indicates adapter register timeout error.
2524-101	D	2524	Description: Adapter configuration error.
2524-701	G	2524	Description: Error Log Analysis indicates adapter hardware error.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2524-702	G		Description: Error Log Analysis indicates SCSI device error. Action: Use Chapter 8, "MAP 0050: SCSI Bus Problems", on page 43.
2524-703	G	2524 221	Description: Error Log Analysis indicates hardware system error due to EEH reset problem.
2524-704	G	2524 221	Description: Error Log Analysis indicates hardware system error from EEH event.
2524-705	G	2524 221	Description: Error Log Analysis indicates PCI bus error.
2524-706	G	2524	Description: Error Log Analysis indicates adapter hardware error.
2524-707	G	2524 221	Description: Error Log Analysis indicates PCI bus error.
2524-708	G	2524	Description: Error Log Analysis indicates adapter register timeout error.
2530-101	D	221	Description: Enhanced Error Handling failure on bus.
2530-102	D	221	Description: Enhanced Error Handling logic failure.
2530-103	D	2530	Description: Enhanced Error Handling failure on adapter.
2530-104	D	2530	Description: **Port** command test failure.
2530-105	D	2530	Description: **CU** command test failure.
2530-106	D	2530	Description: External wrap test failure.
2530-107	D	2530	Description: A non-critical error occurred. Action: Replace the adapter during scheduled maintenance. An encryption authentication problem has been detected.
2530-201	D	2530 221	Description: EEPROM test failure.
2530-202	D	2530 221	Description: Internal wrap test failure.
2530-701	G	2530	Description: Error log analysis indicates that this device has failed to initialize due to a self-test failure.
2530-702	G	2530	Description: Error log analysis indicates that this device has failed to initialize due to an EEH hardware error.
2530-703	G	2530	Description: Error log analysis indicates that this device has failed to initialize due to a problem with the EEPROM on the adapter.
2530-704	G	2530 221	Description: Error log analysis indicates that this device has failed to initialize due to EEH errors.
2550-001	D	Software 2550	Description: Software error.
2550-002	D	2550 Software	Description: Adapter failure.
2550-003	D	2550 227	Description: Adapter failure.
2550-004	D	2550 Monitor/ Cable	Description: Adapter or display failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2550-005	D	2550 227 Monitor/ Cable	Description: Adapter or display failure.
2551-001	D	Software 2551	Description: Software error.
2551-002	D	2551 Software	Description: Adapter failure.
2551-003	D	2551 227	Description: Adapter failure.
2551-004	D	2551 Monitor/ Cable	Description: Adapter or display failure.
2551-005	D	2551 227 Monitor/ Cable	Description: Adapter or display failure.
2562-601	G	2562	Description: Error Log Analysis indicates adapter function failure.
2570-101	D	2570	Description: DES test failed.
2570-102	D	2570	Description: RSA test failed.
2570-103	D	2570	Description: MAC test failed.
2570-104	D	2570	Description: DES and SHA test failed.
2570-105	D	2570	Description: DES to SHA test failed.
2570-106	D	221	Description: Enhanced Error Handling Circuitry failure.
2570-107	D	221	Description: Enhanced Error Handling failure on bus.
2570-108	D	221	Description: Enhanced Error Handling failure on adapter.
2570-201	D	2570 221	Description: Register test failed.
2570-601	G	2570	Description: ELA indicates hardware failure has ocurred.
2570-602	G	2570	Description: ELA indicates hardware timeout has ocurred.
2570-603	G	2570	Description: ELA indicates hardware failure and timeout has ocurred.
2580-102	D	2580	Description: A critical failure has occurred on an undefined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-103	D	2580	Description: A non-critical failure has occurred on an undefined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-104	D	2580	Description: An unrecoverable failure has occurred on an undefined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-122	D	2580	Description: A critical power supply failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-123	D	2580	Description: A non-critical power supply failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2580-124	D	2580	Description: An unrecoverable power supply failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-132	D	2580	Description: A critical fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-133	D	2580	Description: A non-critical fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-134	D	2580	Description: An unrecoverable fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-148	D	2580	Description: The enclosure indicates a temperature threshold warning. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-149	D	2580	Description: The enclosure indicates a temperature threshold failure. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-172	D	2580	Description: A critical enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-173	D	2580	Description: A non-critical enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-174	D	2580	Description: An unrecoverable enclosure services failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-182	D	2580	Description: A critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-183	D	2580	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-184	D	2580	Description: An unrecoverable failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-192	D	2580	Description: A critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-193	D	2580	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-194	D	2580	Description: A non-critical failure has occurred on a user-defined element. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-201	D	2580 891	Description: Device configuration error. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-202	D	2580 891	Description: The enclosure failed to open. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-203	D	2580 891	Description: The enclosure failed to return inquiry data. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2580-204	D	2580	Description: A critical power supply or fan failure has occurred. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2580-205	D	2580	Description: A failure has occurred on a redundant power supply or fan. Action: Go to Chapter 11, "MAP 0210: General Problem Resolution", on page 55.
2590-101	D	2590	Description: Unable to open CD-ROM device driver.
2590-201	D	25A0	Description: Unable to configure adapter.
2590-202	D	2590 25A0 media	Description: Unable to configure the device.
2590-203	D	25A0	Description: Unable to open IDE adapter driver.
2590-204	D	media 2590	Description: The **Inquire** command failed.
2590-205	D	2590 media	Description: The **Read Sense Data** command failed.
2590-206	D	2590	Description: The **Test Unit Ready** command failed.
2590-207	D	media 2590	Description: The test media is bad or missing.
2590-208	D	2590 media	Description: The **CD-ROM Play Audio** command failed.
2590-209	D	2590	Description: No tone during audio test.
2590-210	D	2590	Description: The **Prevent Media Removal** or **Allow Media Removal** command failed.
2590-211	D	2590	Description: CD-ROM drive indicates an error.
2591-101	D	2591	Description: Unable to open DVD-ROM device driver.
2591-201	D	25A0	Description: Unable to configure adapter.
2591-202	D	2591 25A0 media	Description: Unable to configure the device.
2591-203	D	25A0	Description: Unable to open IDE adapter driver.
2591-204	D	media 2591	Description: The **Inquire** command failed.
2591-205	D	2591 media	Description: The **Read Sense Data** command failed.
2591-206	D	2591	Description: The **Test Unit Ready** command failed.
2591-207	D	2591 media	Description: The test media is bad or missing.
2591-208	D	2591 media	Description: The **DVD-ROM Play Audio** command failed.
2591-209	D	2591	Description: No tone during audio test.
2591-210	D	2591	Description: The **Prevent Media Removal** or **Allow Media Removal** command failed.
2591-211	D	2591	Description: DVD-ROM drive indicates an error.
2591-701	D	2591	Description: ELA indicates drive hardware failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2591-702	D	2591	Description: ELA indicates drive hardware failure.
2592-101	D	2592	Description: Unable to open slimline DVD-ROM device driver.
2592-201	D	25A0	Description: Unable to configure adapter.
2592-202	D	2592 25A0 media	Description: Unable to configure the device.
2592-203	D	25A0	Description: Unable to open IDE adapter driver.
2592-204	D	media 2592	Description: The **Inquire** command failed.
2592-205	D	2592 media	Description: The **Read Sense Data** command failed.
2592-206	D	2592	Description: The **Test Unit Ready** command failed.
2592-207	D	media 2592	Description: The test media is bad or missing.
2592-208	D	2592 media	Description: The slimline **DVD-ROM Play Audio** command failed.
2592-209	D	2592	Description: No tone during audio test.
2592-210	D	2592	Description: The **Prevent Media Removal** or **Allow Media Removal** command failed.
2592-211	D	2592	Description: Slimline DVD-ROM drive indicates an error.
2592-701	D	2592	Description: ELA indicates drive hardware failure.
2592-702	D	2592	Description: ELA indicates drive hardware failure.
25C0-101	D	221	Enhanced Error Handling Failure on bus.
25C0-102	D	293	Enhanced Error Handling Logic Failure.
25C0-103	D	25C0 221	Enhanced Error Handling Failure while testing adapter.
25C0-104	D	25C0	Internal wrap test failure (10 Mbps).
25C0-105	D	25C0	Internal wrap test failure (100 Mbps).
25C0-106	D	25C0	Internal wrap test failure (1000 Mbps).
25C0-107	D	25C0	External wrap test failure (10 Mbps).
25C0-108	D	25C0	External wrap test failure (100 Mbps).
25C0-201	D	25C0 221	Registers test failure.
25C0-701	G	25C0	Failure to initialize due to a self-test failure.
25C0-702	G	25C0 221	Failure to recover from an EEH event.
25C0-703	G	25C0	Failure to initialize due to a problem while reading the EEPROM on the adapter.
25C0-704	G	25C0 221	Device has attempted error recover.
25C1-101	D	221	Enhanced Error Handling Failure on bus.
25C1-102	D	293	Enhanced Error Handling Logic Failure.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
25C1-103	D	25C1 221	Enhanced Error Handling Failure while testing adapter.
25C1-104	D	25C1	Internal wrap test failure (10 Mbps).
25C1-105	D	25C1	Internal wrap test failure (100 Mbps).
25C1-106	D	25C1	Internal wrap test failure (1000 Mbps).
25C1-107	D	25C1	External wrap test failure (10 Mbps).
25C1-108	D	25C1	External wrap test failure (100 Mbps).
25C1-201	D	25C1 221	Registers test failure.
25C1-701	G	25C1	Failure to initialize due to a self-test failure.
25C1-702	G	25C1 221	Failure to recover from an EEH event.
25C1-703	G	25C1	Failure to initialize due to a problem while reading the EEPROM on the adapter.
25C1-704	G	25C1 221	Device has attempted error recovery.
25C3-201	G	25C1 221	Registers test failure.
25D0-099	D	25D0	Description: Audio System error log entry.
25D0-101	D	25D0 software	Description: Audio Subsystem failed.
25D0-102	D	25D0	Description: CS4232 failed.
25D0-103	D	25D0	Description: Clock control failed.
25D0-108	D	25D0	Description: Loop back failed.
2600-101	D	2600	Description: The Fibre Channel Adapter configuration failed.
2600-102	D	2600	Description: The Reset test failed.
2600-103	D	2600	Description: The Register test failed.
2600-104	D	2600	Description: The SRAM test failed.
2600-105	D	2600	Description: The Internal Wrap test failed.
2600-106	D	2600	Description: The Gigabaud Link Module (GLM) Wrap Test Failure.
2600-107	D	2600	Description: The External Wrap test failed.
2600-109	D	221	Description: Enhanced Error Handling Failure on EADs chip.
2600-110	D	2600	Description: Enhanced Error Handling Failure on adapter.
2600-201	D	2600 221	Description: The Configuration Register test failed.
2600-202	D	2600 221	Description: The Interrupt test failed.
2600-203	D	2600 221	Description: The PCI Wrap test failed.
2600-204	D	2600 221	Description: The DMA test failed.
2600-205	D	2600 221	Description: I/O error on a read/write operation.

Service Request Number	SRN Src.	Failing Function Codes	Description and Action (Unless otherwise indicated, use Chapter 11, "MAP 0210: General Problem Resolution", on page 55.)
2600-701	G	2600 221	Description: Error log analysis indicates that an error has occurred with the adapter.
2600-703	G	2600	Description: Error log analysis indicates that an unknown adapter error has occurred.
2600-704	G	2600	Description: Error log analysis indicates that an adapter error has occured.

Chapter 38. Failing Function Codes (FFCs)

Failing function codes represent functions within the system unit.

Note: When replacing a FRU, use Chapter 23, “MAP 0410: Repair Checkout”, on page 109 To verify the fix.

Description of the Failing Function Code List

The failing function codes are listed in numerical sequence.

A function may not be physically packaged on the same FRU in different system units. When this condition exists, the FRU part number for each type of system unit is listed.

List Column Heading Term Definitions

The columns in the failing function code list are as follows:

Failing Function Code

The failing function code number from the SRN list in Chapter 17, “MAP 0260: System Hangs During Resource Configuration”, on page 85.

Machine Type/Model

This column is used when the failing function is on a FRU which differs by machine type and model. Use the part number for the type system unit you are servicing.

Note: Although the machine cover logo may depict the model number as four digits, the service and parts ordering system requires three-digit numbers. For example, if the cover logo depicts model number xxxx, service and parts documentation may refer to that model as xxx.

Part Number

This column contains the part number of the FRU that contains the failing function. Use the part number for the type of system unit you are servicing.

Description and Notes

This column contains the description of the FRU and any usage notes. The FRU description may be different in different system units. Use the one for the type of system unit you are servicing.

Failing Function Code List

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
11A		09J8199	Battery kit, Cryptographic Coprocessor
132			The program that just loaded may be damaged.
151		33F8354	Battery, time-of-day, NVRAM, etc. Battery **Note:** After replacement of this FRU the following must be done by you or the customer: 1. Time and date must be set. 2. Network IP addresses should be set (for machines that IPL from a network). 3. The bootlist should be set to reflect the customers preference for the IPL devices (when set different than the default values).
151	17S/70 17S/7A 17S/80 17S/85	03N3523 03N3523 11K0301 16G8095	Service Processor Card Service Processor Card Service Processor Card Battery
151	256F/0 256F/1	16G8095 43L5269	Battery System board
151	25F/8	16G8095 43L5269	Battery System board
151	266H/0 266H/1 266M/1 26H/8 26M/8	16G8095 41L5560	Battery Primary I/O backplane
151	286/C4 286/E4	15F8409 00P4488 00P5830	Battery System Board (with RIO capability) System Board (with RIO-2 capability)
151	296/C3 296/E3	16G8095 00P5245	Battery Service Processor
151	386/M2	00P4062 16G8095	Service Processor/PCI Backplane Battery
151	396/51	16G8095 09P6222	Battery Service Processor Card
151	406/1R 40W/42	44H2790	Integrated Battery Feature
151	406/71 406/81	16G8095 09P2435	Battery Primary I/O Book
151	43/15 441/7 46B/5	15F8409	Battery
151	9076 SMP Thin/Wide Node	41L6138	I/O Planar (Check NVRAM jumper)
151	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz) (Check NVRAM jumper)

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
151	9076/ Power3 SMP High Node	11K0571	NIO Planar **Note:** There is no battery for this model.
152	17S/70	21H7030 21H6961 21H7763 21H7100 93H3753 93H3734 93H3682 07L6658 07L6656	System Power Supply problem AC Bulk Power Supply SPCN card Programmable regulator assembly Memory regulator assembly AC box, Domestic (U.S.) single phase AC box, World Trade, single phase AC box, World Trade, two phase Bulk Power Supply (-48 Vdc) DC box (-48 Vdc)
152	17S/7A	21H7030 21H6961 21H7763 21H7100 93H3753 93H3734 93H3682 97H9465 08L1336	AC Bulk Power Supply SPCN card Programmable regulator assembly Memory regulator assembly AC box, Domestic (U.S.) single phase AC box, World Trade, single phase AC box, World Trade, two phase Power distribution board I/O Drawer Power Supply
152	17S/80 17S/85	 21H7719 21H6961 21H7763 21H3603 93H3753 93H3734 93H3682 21H7000 04N6092 97H9465 08L1336	System Rack AC Bulk Power Supply SPCN Card Programmable Regulator assembly CPM Regulator assembly AC Box, Domestic (U.S.) Single Phase AC Box, World Trade, Single Phase AC Box, World Trade, Two Phase With dual line cord feature: AC Box, Single phase Concurrent maintenance card I/O Rack Power Distribution Board I/O Drawer Power Supply
152	24	93H3504	Power Supply
152	256F/0 256F/1	24L1400	Power supply
152	25F/3	40H5428	Power Supply (474 watts)
152	25F/3 25F/4	12J5701	Optional Power Supply **Note:** If your are replacing the power supply because of receiving SRNs 950-700 thru 950-998, replace the optional power supply first.
152	25F/4	07L7476	Power Supply (575 watts)
152	25F/5	93H9789	Power Supply
152	25F/8	24L1400	Power supply
152	266H/0 266H/1	11K0802 41L5404 11K0812 41L5413 03N2829	CEC drawer ac power supply CEC drawer dc power supply I/O drawer ac power supply I/O drawer dc power supply Cooling unit (filler)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
152	266M/1	24L0728 44L0045 11K0812 03N2829	CEC drawer ac power supply CEC drawer dc power supply I/O drawer ac power supply Cooling unit (filler)
152	26B/8	00P2342 00P2344	Power supply, ac Power supply, dc
152	26H/1	93H8714	System Power Supply problem Power Supply
152	26H/5	93H9551 08L1336 97H9464	Power Distribution Board Power Supply Power Supply(-48 Vdc) **Note:** Replace the Power Distribution Board before replacing the power supply.
152	26H/7	08L0388 94H1041 41L4881	Power Distribution Board Power Supply Power Supply(-48 Vdc) **Note:** Replace the Power Distribution Board before replacing the power supply.
152	26H/8	11K0802 41L5404 11K0812 41L5413 03N2829	CEC drawer ac power supply CEC drawer dc power supply I/O drawer ac power supply I/O drawer dc power supply Cooling unit (filler)
152	26M/8	24L0728 44L0045 11K0812 03N2829	CEC drawer ac power supply CEC drawer dc power supply I/O drawer ac power supply Cooling unit (filler)
152	286/C1 286/E1	24P6867	Power supply
152	286/C4 286/E4	09P5894	AC Power Supply
152	296/C3 296/E3	53P5617	AC Power Supply
152	386/M2	21P4437	AC Power Supply
152	396/51	44P2134 09P6222	Distributed Converter Assembly (DCA) Service Processor Card
152	406/71 406/81	11P1543 11P1544 11P1545 11P1546 11P1547 11P1548 11P1549 11P1550 11P1551 11P1552 11P1540	Distributed Converter Assembly (DCA1) P00 Distributed Converter Assembly (DCA1) P01 Distributed Converter Assembly (DCA2) P00 Distributed Converter Assembly (DCA2) P01 Distributed Converter Assembly (DCA3) P00 Distributed Converter Assembly (DCA3) P01 Distributed Converter Assembly (DCA4) P00 Distributed Converter Assembly (DCA4) P01 Distributed Converter Assembly (DCA5) P00 Distributed Converter Assembly (DCA5) P01 Capacitor Card
152	406/1D	11P3582	Distributed Converter Assembly

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
152	406/1R 40W/42	31L8609 11P1598 12K0981 11P4205 44H2790	Bulk Power Regulator (BPR) Bulk Power Controller (BPC) Bulk Power Distribution (BPD) Bulk Power Enclousure (BPE) Integrated Battery Feature (IBF)
152	43/14 43/15 43/24	40H7566 40H7563	PFC Power Supply (Japan Only) Non-PFC Power Supply (Other Countries)
152	43/26	97H9337	Power supply
152	43/27	24L1968	Power Supply
152	441/7	41L5215	Power Supply
152	442/7	24L1968	Power Supply
152	46B/5	24L2659	Power supply
152	7203	00G2960	Bridge Box Power Supply
152	7204/001	46G3934	Bridge Box Power Supply
152	7204 Models, 112, 113, 114, 139, 317, 325, 339	59H3760	Bridge Box Power Supply
152	7204 Models 010, 215, 315	8191380	Bridge Box Power Supply
152	7206/001	46G3934	Bridge Box Power Supply
152	7206/002	8191380	Bridge Box Power Supply
152	7207 Models 001, 011	00G2960	Bridge Box Power Supply
152	7207/012	46G3934	Bridge Box Power Supply
152	7207/315	59H3760	Bridge Box Power Supply
152	7208/001	00G2960	Bridge Box Power Supply
152	7208/011 7208/034 7208/341 7208/342	46G3934 59H3760 59H2835 59H2836	Bridge Box Power Supply
152	7209	46G3934	Bridge Box Power Supply
152	7210/001	00G2960	Bridge Box Power Supply
152	7210/005	65G7585	Power supply/enclosure
152	7210/010	59H3760	Power supply
152	7236 MediaStreamer	40H7566	Power Supply
152	11D/10	09P3354	AC Power Supply
152	11D/20	53P4832	Power Supply
152	17F/3	93H2232	Power Supply
152	16-Port RAN	93H7091	Power Supply for Remote Async Node, FRU Part Numbers 51G8139, 93H6549, or 93H6563
152	9076 SMP Thin/Wide Node	11J6523 11J6524	CPU Power Supply I/O power supply
152	9076/ Power3 SMP Thin/Wide Node	31L7865 11J6524	CPU Power Supply I/O Power Supply

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
152	9076/ Power3 SMP High Node	12K0447 12K0448 12K0449 12K0450 12K0452	2.5V DC/DC Regulator Card 3.3V DC/DC Regulator Card +5V standby/+12V DC/DC regulator card -5V/-12V DC/DC regulator card Power distribution board
152	9076/ Power3 RIO Drawer	11J6495	Power card (2)
152	9112/265	24P6867	Power supply
153	17S/70	07L7178 93H8714 93H7539 93H7542	Device drawer, exp unit pwr sup 1/4 Power Supply (AC) 3/4 Power Supply (AC) 1/4 Power Supply (-48 Vdc) 3/4 Power Supply (-48 Vdc)
153	17S/7A	08L1336	I/O Drawer Power Supply
153	17S/80 17S/85	08L1336	I/O Drawer Power Supply
153	406/1D	11P3582	Distributed Converter Assembly
153	406/1R 40W/42	31L8609 11P1598 12K0981 11P4205 44H2790	Bulk Power Regulator (BPR) Bulk Power Controller (BPC) Bulk Power Distribution (BPD) Bulk Power Enclousure (BPE) Integrated Battery Feature (IBF)
159		6247455	Tablet Puck problem Tablet cursor, Models 21, 22
159		74F3131	Tablet cursor, 4-button, 6093 Models 11, 12
159		74F3132	Tablet cursor, 6-button, 6093 Models 11, 12
165	17S/70	91H1381 03N3523	Indicator Card Service Processor Card
165	17S/7A	91H1381 07L9514 03N3523	Indicator Card Drawer Indicator Panel Card Service Processor Card **Note:** See the location codes in the system unit service guide to determine if the operator panel or the drawer indicator panel is the failing FRU.
165	17S/80 17S/85	91H1381 07L9514 11K0301	Indicator Card Drawer Indicator Panel Card Service Processor Card **Note:** See the location codes in the system unit service guide to determine if the operator panel or the drawer indicator panel is the failing FRU.
165	24	93H4859 40H5434	Display panel Display cable
165	256F/0 256F/1	24L1593	Operator panel
165	25F/3	82G3614 71G6290 93H5911	Display panel Display cable Operator panel control assembly

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
165	25F/4	82G3614 93H1816 07L7600	Display panel Display cable Operator panel control assembly
165	25F/5	06H7082 93H1816 93H2922	Display panel Display cable Operator panel control assembly
165	25F/8	24L1593	Operator panel
165	266H/0 266H/1 266M/1	24L1089	Primary I/O drawer operator panel
165	26B/8	04N5108 04N6150	Operator panel signal cable Operator panel assembly
165	26H/1	82G3614 93H1816 93H7439	Display panel Display cable Operator panel control assembly
165	26H/5	06H7082 93H1816 93H2922	Display panel Display cable Operator panel control assembly
165	26H/7	06H7082 93H1816 41L6006	Display panel Display cable Operator panel control assembly
165	26H/8 26M/8	24L1089	Primary I/O drawer operator panel
165	286/C1 286/E1	21P6650 21P7166	Operator panel cable Operator panel assembly
165	286/C4 286/E4	00P3210	Operator Panel
165	296/C3 296/E3	53P6230 97P2342	Operator Panel Operator Panel Cable
165	386/M2	97P2908	Operator Panel
165	406/71 406/81	24L1089	Operator Panel
165	43/14 43/15 43/24	73H3766	Operator Panel problem Operator panel circuit assembly
165	43/26 43/27	97H9328 97H9442 07L7234	Operator panel signal cable Operator panel audio cable Operator panel assembly
165	441/7	41L6173	Operator Panel
165	442/7	97H9328 97H9442 07L7234	Operator panel signal cable Operator panel audio cable Operator panel assembly
165	46B/5	07L9101	Operator panel
165	17F/3	82G3614 71G6290 73H0895	Display panel Display cable Operator panel control assembly

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
165	9076 SMP Thin/Wide Node	11J4000	Supervisor Card
165	9076/ Power3 SMP Thin/Wide Node	11J4000	Supervisor Card
165	9112/265	21P6650 21P7166	Operator panel cable Operator panel assembly
166	17S/70	21H6959 40H4878	Fan Assembly or Blower problem System rack blower 3-Fan assembly
166	17S/7A	21H6959 41L6269 93H8868	System rack blower I/O drawer blower DASD Fan Assembly
166	17S/80 17S/85	21H6959 41L6269 93H8868	System Rack System rack blower I/O Rack I/O drawer blower DASD Fan Assembly
166	24	06H2647	Fan
166	256F/0 256F/1	24L1730	Fan
166	25F/3	39H9898	Fan
166	25F/4	40H1424 40H1423 40H1433	Fan 1 and 3 Fan 2 Fan 4
166	25F/5	40H1424 40H1433 73H3577	Fan 3 Fan 2 and 4 Fan 1 CPU
166	25F/8	24L1730	Fan
166	266H/0 266H/1	41L5315 41L5448 03N2829 41L5448	CEC drawer fan CEC drawer fan Cooling unit (filler) I/O drawer fan
166	266M/1	04N3345 03N2829 41L5448	CEC drawer fan Cooling unit (filler) I/O drawer fan
166	26B/8	04N5124 04N5121	Front fans 1 and 2 Rear fans 3 and 4
166	26H/1	40H4878	3-Fan hot-plug assembly
166	26H/5	93H8868 41L6269 93H8570	Fan 1, 2, 3, 4 Blower Fan 5, 6 Fan 7 CPU
166	26H/7	93H8868 41L6269 41L5329 08L0530	Fan 1, 2, 3, 4 Blower Fan 5, 6 Fan 7 CPU I/O Blower 8
166	26H/8	41L5315 41L5448 03N2829 41L5448	CEC drawer fan CEC drawer fan Cooling unit (filler) I/O drawer fan

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
166	26M/8	04N3345 03N2829 41L5448	CEC drawer fan Cooling unit (filler) I/O drawer fan
166	286/C1 286/E1	21P6798 09N7515 21P6811	Processor Fan Blower Assembly Rear Fan Assembly
166	286/C4 286/E4	09P5865 09P5866	Processor Fan 1 and 2 PCI Fan 3 and 4
166	296/C3 296/E3	53P4612	Fan Assembly
166	396/51	44P0807	Fan Assembly
166	406/1R 40W/42	11P1787	Bulk Power Fan
166	386/M2	21P4491 21P4490	Drawer Fan Processor Fan
166	396/51	40P0807	Drawer Fan
166	406/1D	11P4624	Fan Assembly
166	406/71 406/81	07H5349	Blower
166	43/14 43/15	40H7584	Fan Assembly or Blower problem Fan assembly
166	43/24	93H1820	Fan assembly
166	43/26 43/27	74G6361 97H9425	Fan 1, CEC Fan 2, I/O
166	441/7	41L6172 10L5575 10L5574	Bottom front fan assembly Top front fan Rear fan
166	442/7	74G6361 97H9425	Fan 1, CEC Fan 2, I/O
166	46B/5	11H9744	Fan assembly
166	7236 MediaStreamer	94H0620	Fan assembly
166	11D/10	09P3354	Drawer Fan
166	11D/20	53P0262	Drawer Fan
166	9076 SMP Thin/Wide Node	11J6513 11J6514 11J6513	CPU Fan 1 CPU Fan 2 (High Speed) I/O Fan 3 and 4
166	9076/ Power3 SMP Thin/Wide Node	11J6513 11J6514	Fan (Medium Speed) Fan (High Speed)
166	9076/ Power3 SMP High Node	07L8594	Fan assembly
166	9112/265	21P6798 09N7515 53P1990	Processor Fan Blower Assembly Rear Fan Assembly
166	9076/ Power3 RIO Drawer	11J5275	Fan (2)

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
167	24	93H3504	Power Supply Fan problem Power supply
167	25	12J5701 40H5428 07L7476 93H9789	Power supply
167	256F/0 256F/1	24L1400	Power supply
167	25F/3 25F/4 25F/5	12J5701 40H5428 07L7476 93H9789	Power supply
167	25F/8	24L1400	Power supply
167	26H/5	93H8868	Power supply
167	286/C4 286/E4	09P5692	AC Power Supply
167	296/C3 296/E3	53P5617	AC Power Supply
167	406/1R 40W/42	11P1787	Bulk Power Fan
167	43/14 43/15 43/24	40H7566 40H7563	PFC Power Supply (Japan Only) Non-PFC Power Supply (All Other Countries)
167	43/26	97H9337	Power supply
167	43/27	24L1968	Power Supply
167	441/7	41L5215	Power Supply
167	442/7	24L1968	Power Supply
167	46B/5	24L2659	Power supply
167	9076 SMP Thin/Wide Node	11J6513 11J6514 11J6513	CPU Fan 1 CPU Fan 2 (High Speed) I/O Fan 3 and 4
167	9076/ Power3 SMP Thin/Wide Node	11J6513 11J6514	Fan (Medium Speed) Fan (High Speed)
169			Operator Panel Logic problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221..
181	24	11H8073	Diskette drive cable problem Cable, diskette drive signal
181	256F/0 256F/1	24L1771 23L2922	Cable, diskette drive signal Cable, diskette drive power
181	25F/3	11H8162	Cable, diskette drive signal
181	25F/4 25F/5	73H1894	Cable, diskette drive signal
181	25F/8	24L1771 23L2922	Cable, diskette drive signal Cable, diskette drive power

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
181	26H/1	73H1894	Cable, diskette drive signal
181	26H/5	73H1894	Cable, diskette drive signal
181	26H/7	73H1894	Cable, diskette drive signal
181	286/C4 286/E4	09P5863 09P5864	Cable, Diskette 34-pin Cable, Diskette Power 4-pin
181	406/71 406/81	11P2353	Cable, diskette drive signal
181	43/14 43/24	93H1821	Cable, diskette drive signal
181	43/15	93H1821	Cable, diskette drive signal
181	43/26 43/27	97H9320	Cable, diskette drive signal
181	441/7	24L2668	Cable, diskette drive signal
181	442/7	97H9320	Cable, diskette drive signal
181	46B/5	76H4091 24L2668	Diskette drive Cable, diskette drive
181	17F/3	73H4937	Cable, diskette drive
185		71G6458	X.25 Interface Co-Processor Adapter
186		33F8967 84F7540 53F2662	Co-Processor Multiport Adapter, Model 2 Daughter Card 1 MB Memory Module
188		6247454	Tablet stylus, Models 21, 22
188		74F3133	Tablet stylus, 6093 Models 11, 12
190	17S/70	 93H2455 93H2456 07L7005 93H2485 52G4291 06H6036 52G4233 73H3142	Internal Disk Signal Cable problem SCSI Cable Media Bay to SCSI slot 2 I35 SCSI Cable, slot 9 to Redrive Card I35 SCSI Cable, slot 9 to Redrive Card SCSI Cable, I35 SCSI Card to Card SCSI Cable, SCSI-2 to SE/SE SCSI Redrive Card (0.6 m) SCSI Cable, SCSI-2 to SE/SE SCSI Redrive Card (1.0 m) SCSI Cable, SCSI-2 to SE/SE SCSI Redrive Card (2.5 m) SCSI Cable, SCSI-2 to Bulkhead **Note:** Consult the 17S/70 Service Guide before ordering replacement cables.
190	17S/7A	93H2455 06H6876	SCSI Cable Media Bay to SCSI Adapter SCSI Card to Backplane **Note:** Consult the 17S/7A Service Guide before ordering replacement cables.

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
190	17S/80 17S/85	93H2455 06H6876	SCSI Cable Media Bay to SCSI Adapter SCSI Card to Backplane **Note:** Consult the 17S/80 or 17S/85 Service Guide before ordering replacement cables.
190	24	12H1169	Cable, Internal SCSI, 4-drop
190	256F/0 256F/1	04N4265 00P2358 04N2273 04N4555 04N5589	Internal SCSI cable, 4-drop SCSI cable, short (8 inches) SCSI cable, long (44 inches) SCSI two-pack backplane SCSI six-pack backplane
190	25F/3	73H3596	Cable, Internal SCSI, 4-drop
190	25F/4	93H3490	Cable, Internal SCSI, 4-drop
190	25F/5	73H3596	Cable, Internal SCSI, 4-drop
190	25F/8	04N4265 00P2358 04N2273 04N4555 04N5589	Internal SCSI cable, 4-drop SCSI cable, short (8 inches) SCSI cable, long (44 inches) SCSI two-pack backplane SCSI six-pack backplane
190	266H/0 266H/1 266M/1	41L5519	I/O drawer internal SCSI cable
190	26B/8	21P3951	Cable, internal SCSI
190	26H/1	73H3596	Cable, Internal SCSI, 4-drop
190	26H/5	93H9613 52G4291 52G4233 06H6876	Cable, Internal SCSI, 4-drop Cable, SCSI-2 Cable, SCSI Cable, SCSI
190	26H/8 26M/8	41L5519	I/O drawer internal SCSI cable
190	26H/7	93H9613 52G4291 52G4233	Cable, Internal SCSI, 4-drop Cable, SCSI-2 Cable, SCSI
190	286/C1 286/E1	21P6655	Cable, internal SCSI
190	286/C4 286/E4	09P5889 09P5895 09P5888	Cable, SCSI 68-pin Cable, SCSI 50-pin Cable, DASD Power 5-pin
190	296/C3 296/E3		Cable, internal SCSI
190	386/M2	21P5205	SCSI Cable, media/DASD
190	396/51	44P2165	DASD Ribbon Cable
190	406/71 406/81	11P2349 11P2350	SCSI Cable for Media Subsystem Rear Component SCSI Cable for Media Subsystem Front Component

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
190	43/14 43/15	73H0435	Internal Disk Signal Cable problem Cable, Internal SCSI, 4-drop
190	43/24	40H7572	Cable, Internal SCSI, 4-drop
190	43/24	93H6151	Ultra SCSI Cable assembly (optional)
190	43/26 43/27	97H9322 01K6497	Cable, Internal SCSI, 4-drop Cable, Internal SCSI Pigtail
190	441/7	41L6178	Cable, Internal SCSI, 7-drop
190	442/7	97H9322 01K6497	Cable, Internal SCSI, 4-drop Cable, Internal SCSI Pigtail
190	46B/5	24L2667	Cable, internal SCSI
190	7236 MediaStreamer	93H6435 93H6629	SCSI Cable SCSI ID Cable
190	17F/3	93H8972	Cable, Internal SCSI, 3-drop
190	9076 SMP Thin/Wide Node	08J6105 11J5177 08J6111	Cable, Internal SCSI, 2-drop Cable, Internal SCSI, 4-drop Alternate DASD Cabling
190	9076/ Power3 SMP Thin/Wide Node	08J6105 11J5177 08J6111	Cable, Internal SCSI, 2-drop Cable, Internal SCSI, 4-drop Alternate DASD cabling
190	9076/ Power3 SMP High Node	08L1353 41L6350 41L5044 03N3667	Docking card, processor Docking card, I/O Cable, SCSI to docking card Cable, DASD
190	9076/ Power3 RIO Drawer	05N4972 11J5276	DASD docking card Cable, SCSI
190	9112/265	21P6655	Cable, internal SCSI
190	2104	09L3111 09L3307 09L3305 09L3303 09L3301 09L3299 09L3309	JBOD card 20 m cable, adapter to JBOD 10 m cable, adapter to JBOD 5 m cable, adapter to JBOD 3 m cable, adapter to JBOD 1 m cable, adapter to JBOD 3 m non-LVD cable, adapter to JBOD
192	7203	00G2960	Power Supply, portable disk drive
199			SCSI Enclosure Service (SES) **Note:** If the system or enclosure type does not appear in the list below, refer to it's service guide.
199	256F/0 256F/1 25F/8	04N5589	SCSI six-pack backplane
199	296/C3 296/E3	97P2313 00P5684	Removable Media Backplane SCSI Backplane
199	406/1D	11P2395	DASD 4-Pack Cage Assembly
199	9076/ Power3 RIO Drawer	12K0503	DASD Controller
199	2104	09L3111	JBOD card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
201			**Note:** Content moved to FFC 190.
203			**Note:** Content moved to FFC 152.
210	17S/70	90H9694 90H9662	Fixed Point Processor problem Processor Card (4x) (Type 2) (120 MHz) Processor Card (4x) (Type 1) (120 MHz)
210	17S/7A	08L1474 08L1473	Processor Card (Type 2) (262 MHz) Processor Card (Type 1) (262 MHz)
210	17S/80	23L7434 23L7447	Processor Card (Type 1 RH) Processor Card (Type 2 LH)
210	17S/85	21P4511 21P4517	Processor Card (Type 1 RH) Processor Card (Type 2 LH)
210	24E/2	40H6616 03N3989	CPU card (100 MHz) CPU card (233 MHz)
210	24E/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
210	256F/0	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz)
210	256F/1	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301 23L7799 53P1334	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz) 6-way processor card (668 MHz) 6-way processor card (750 MHz)
210	25F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
210	25F/4	11H7517 41L6111	CPU card (166 MHz) CPU card (233 MHz)
210	25F/5	93H2679 73H4768 93H9018 93H8945	166 MHz CPU card (1-way) 166 MHz CPU card (2-way) 332 MHz CPU card (1-way) 332 MHz CPU card (2-way)
210	25F/8	04N4765 21P4751 21P4760 21P4774	1-way processor card (450 MHz) 2-way processor card (450 MHz) 4-way processor card (450 MHz) 6-way processor card (500 MHz)
210	266H/0	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750MHz)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
210	266H/1	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301 23L7799 53P1334	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz) 6-way processor card (668 MHz) 6-way processor card (750 MHz)
210	266M/1	04N6698 21P6381 21P6383	2-way processor card (500 MHz) 2-way processor card (750 MHz) 4-way processor card (750 MHz)
210	26B/8	09P0399 09P0143 09P0406 09P4478	Processor card (375 MHz, one-way) Processor card (375 MHz, two-way, 8 M L2) Processor card (375 MHz, two-way, 4 M L2) Processor Card (450 MHz, two-way)
210	26H/1 26H/1	11H7517	CPU card (166 MHz)
210	26H/5	93H9018 93H8945	CPU card (332 MHz one-way) CPU card (332 MHz two-way)
210	26H/7	 94H1013 94H1008	Fixed Point Processor problem CPU card (332 MHz one-way) CPU card (332 MHz two-way)
210	26H/8	04N4765 21P4751 21P4760 21P4774	1-way processor card (450 MHz) 2-way processor card (450 MHz) 4-way processor card (450 MHz) 6-way processor card (500 MHz)
210	26M/8	04N6930 04N6931	2-way processor card 4-way processor card
210	286/C1 286/E1	09P5495 09P3666 09P3669	333 MHZ Processor card 375 MHz Processor card 450 MHz Processor Card
210	286/C4 286/E4	00P2974 00P2977 00P2728 00P2731 00P2733 00P2736	Processor Card, 1.0 GHz 1-way Processor Card, 1.0 GHz 2-way Processor Card, 1.2 GHz 1-way Processor Card, 1.2 GHz 2-way Processor Card, 1.45 GHz 1-way Processor Card, 1.45 GHz 2-way
210	296/C3 296/E3	00P4948 00P4958 00P4948	1.2 GHz Processor (2-way) 1.2 GHz Processor (1-way) 1.2 GHz Processor (2-way)
210	386/M2	53P4953	4-way Processor Board
210	396/51	44P1542 44P1544	1.3 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card
210	406/71	03N3229 09P3217	1.1 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
210	406/81	00p5153 00p4629 03N3223 03N3228 03N3229 09P3217	1.7 GHz 8-way MCM (GQ) 1.5 GHz 8-way MCM (GQ) 1.3 GHz 4-way MCM with VPD Card 1.3 GHz 8-way MCM with VPD Card 1.1 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card
210	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
210	43/15	41L5912	375 MHz System board
210	43/24	11H7517 41L6111	166 MHz Processor and Cache Card 233 MHz Processor and Cache Card
210	43/26	03N2403	200 MHz CPU card
210	43/27	11K0171 11K0218	CPU card (375 MHz one-way) CPU card (375 MHz two-way)
210	441/7	09P0277 09P0272 09P0943	Processor card (333 MHz) Processor card (400 MHz) Processor card (450 MHz)
210	442/7	11K0171 11K0218 09P4478	CPU card (375 MHz one-way) CPU card (375 MHz two-way) CPU card (450 MHz two-way)
210	46B/5	41L5912	375 MHz System board
210	17F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
210	9076 SMP Thin/Wide Node	93H9716	CPU card (332 MHz)
210	9076/ Power3 SMP Thin/Wide Node	03N2403 11K0232	CPU card (200 MHz) CPU card (375 MHz)
210	9076/ Power3 SMP High Node	11K0198	CPU card
210	9112/265	09P5856	450 MHz Processor Card
212			Cache problem **Note:** For type/model and FRU information refer to FFC 210.
214	17S/70 17S/7A	97H7696	Memory Control Unit problem System backplane assembly
214	17S/80 17S/85	23L7598	System backplane assembly
214	24E/2	40H6616 03N3989	CPU card (100 MHz) CPU card (233 MHz)
214	24E/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
214	256F/0	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz)
214	256F/1	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301 23L7799 53P1334	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz) 6-way processor card (668 MHz) 6-way processor card (750 MHz)
214	25F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
214	25F/4	11H7517 93H5163	CPU card (166 MHz) CPU card (233 MHz)
214	25F/5	07L9718	System board
214	25F/8	04N4765 21P4751 21P4760 21P4774	1-way processor card (450 MHz) 2-way processor card (450 MHz) 4-way processor card (450 MHz) 6-way processor card (500 MHz)
214	266H/0	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz)
214	266H/1	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301 23L7799 53P1334	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz) 6-way processor card (668 MHz) 6-way processor card (750 MHz)
214	266M/1	04N3524	CEC drawer backplane
214	26B/8	08L0988	System board
214	26H/1	11H7517	CPU card (166 MHz)
214	26H/5	07L9718	System board
214	26H/7	08L0988	System board
214	26H/8	04N4765 21P4751 21P4760 21P4774	1-way processor card (450 MHz) 2-way processor card (450 MHz) 4-way processor card (450 MHz) 6-way processor card (500 MHz)
214	26M/8	04N3023	CEC drawer backplane

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
214	286/C1 286/E1	09P2420	System board
214	286/C4 286/E4	00P2974 00P2977 00P2728 00P2731 00P2733 00P2736	Processor Card, 1.0 GHz 1-way Processor Card, 1.0 GHz 2-way Processor Card, 1.2 GHz 1-way Processor Card, 1.2 GHz 2-way Processor Card, 1.45 GHz 1-way Processor Card, 1.45 GHz 2-way
214	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
214	386/M2	09P3876	System Backplane
214	396/51	00P4603	System Backplane
214	406/71 406/81	11P3046	System Backplane
214	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
214	43/15	41L5912	375 MHz System board
214	43/24	11H7517 41L6111	166 MHz Processor and Cache Card 233 MHz Processor and Cache Card
214	43/26	08L1303	Memory Control Unit Problem System board
214	43/27	08L0988	System board
214	441/7	41L572 09P0037	System board, class A System board, class B
214	442/7	08L0988	System board
214	46B/5	41L5912	375 MHz System board
214	17F/3	73H3614 93H2431 03N3989	Memory Control Unit problem CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
214	9076 SMP Thin/Wide Node	07L9718 41L6138 93H3316	CPU chassis system board CPU chassis I/O planar I/O chassis connection card
214	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988 03N2866 03N3368 07L8531	CPU chassis, system board (200 MHz) CPU chassis, system board (375 MHz) CPU chassis, I/O planar (200 MHz) CPU chassis, I/O planar (375 MHz) I/O expansion card
214	9076/ Power3 SMP High Node	03N4184	System Planar
214	9112/265	09P2420	System board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
217	24E/2	40H6616 03N3989	System ROS/EEPROM problem CPU card (100 MHz) CPU card (233 MHz)
217	24E/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
217	256F/0 256F/1	43L5269	System board
217	25F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
217	25F/4	11H7517 93H5163	CPU card (166 MHz) CPU card (233 MHz)
217	25F/5	41L5106	I/O board
217	25F/8	43L5269	System board
217	26B/8	00P1859	I/O board
217	26H/1	11H7517	CPU card (166 MHz)
217	26H/5	41L5106	I/O board
217	26H/7	08L0617	I/O board
217	286/C1 286/E1	09P2420	System Board
217	286/C4 286/E4	00P4488 00P5830	System Board (with RIO capability) System Board (with RIO-2 capability)
217	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
217	43/14	93H7142 93H7143 93H6023 93H9334	System ROS/EEPROM problem 166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
217	43/15	41L5912	375 MHz System board
217	43/24	11H7517 41L6111	166 MHz Processor and Cache Card 233 MHz Processor and Cache Card
217	43/26	41L5511	I/O board
217	43/27	41L6013	I/O board
217	441/7	41L5721 09P0037	System board, class A System board, class B
217	442/7	41L6013	I/O board
217	46B/5	41L5912	375 MHz System board
217	17F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
217	9076 SMP Thin/Wide Node	41L6138	I/O planar

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
217	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
217	9112/265	09P2420	System Board
219			Common Memory Logic problem Refer to Appendix C, “System Memory Reference”, on page 515 for memory card and memory module FRU part numbers. **Note:** If more than a pair of memory modules from the same memory card are reported missing, replace the FRU that the memory modules plug into first. Otherwise, replace the memory module at the physical location code that is reported.
221	17S/70	94H1268	System I/O Control Logic problem I/O planar
221	17S/7A	08L0103	I/O planar
221	17S/80 17S/85	08L1438	I/O planar
221	24	93H4808	System board
221	256F/0 256F/1	43L5269	System board
221	25F/3	93H8371	System board
221	25F/4	93H8652	System board
221	25F/5	41L5106	I/O board
221	25F/8	43L5269	System board
221	266H/0 266H/1 266M/1	41L5560 41L5661	Primary I/O drawer backplane Secondary I/O drawer backplane
221	26B/8	00P1859	I/O board
221	26H/1	93H8652	System board
221	26H/5	41L5106	I/O board
221	26H/7	03N2797	I/O board
221	26H/8 26M/8	41L5560 41L5661	Primary I/O drawer backplane Secondary I/O drawer backplane
221	286/C1 286/E1	09P2420	System Board
221	286/C4 286/E4	00P3166 00P4488 00P5830 00P5290 00P4483	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability) PCI Riser Card (6 slot) PCI Riser Card (4 slot)
221	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Planar (1.2 GHz, 1-way) System Planar (1.2 GHz, 2-way) System Planar (1.45 GHz, 1-way) System Planar (1.45 GHz, 2-way)
221	386/M2	00P4062	Service Processor/PCI Backplane
221	396/51	00P4603	System Backplane

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
221	406/1D	44P0199	I/O Planar
221	43/14	93H7142 93H7143 93H6023 93H9334	System I/O control logic problem 166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
221	43/15	41L5912	375 MHz System board
221	43/24	11H7516	System board
221	43/26	41L5511	I/O board
221	43/27	41L6013	I/O board
221	441/7	41L5721 09P0037	System board, class A System board, class B
221	442/7	41L6013	I/O board
221	46B/5	41L5912	375 MHz System board
221	11D/10	09P5921	I/O Drawer Backplane
221	11D/20	53P3472	PCI Planar
221	17F/3	93H8371	System board
221	9076 SMP Thin/Wide Node	41L6138	I/O planar
221	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
221	9076/ Power3 SMP High Node	11K0571	NIO planar
221	9076/ Power3 RIO Drawer	05N5005	RIO planar (expansion unit)
221	9112/265	09P2420	System Board
226			System Status Logic problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221..
227	17S/70	94H1268 93H8502	ISA/PCI Bus Logic problem I/O board Indicator Panel card
227	17S/7A	08L0103	I/O planar
227	17S/80 17S/85	08L1438	I/O planar
227	24	93H4808	System board
227	256F/0 256F/1	43L5269	System board
227	25F/3	93H8371	System board
227	25F/4	93H8652	System board
227	25F/5	41L5106	I/O board
227	25F/8	43L5269	System board
227	266H/0 266H/1 266M/1	41L5660 41L5661	Primary I/O drawer backplane Secondary I/O drawer backplane

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
227	26B/8	00P1859	I/O board
227	26H/1	93H8652	System board
227	26H/5	41L5106	I/O board
227	26H/7	08L0617	I/O board
227	26H/8 26M/8	41L5660 41L5661	Primary I/O drawer backplane Secondary I/O drawer backplane
227	286/C1 286/E1	09P2420	System Board
227	286/C4 286/E4	00P4488 00P5830	System Board (with RIO capability) System Board (with RIO-2 capability)
227	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
227	386/M2	00P4062	Service Processor/PCI Backplane
227	396/51	00P4603	System Backplane
227	406/1D	44P0199	I/O Planar
227	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
227	43/15	07L8446	375 MHz System board
227	43/24	11H7516	System board
227	43/26	08L0633	I/O board
227	43/27	41L6013	I/O board
227	441/7	41L5721 09P0037	System board, class A System board, class B
227	442/7	41L6013	I/O board
227	46B/5	41L5912	375 MHz System board
227	11D/10	09P5921	I/O Drawer Backplane
227	11D/20	53P3472	PCI Planar
227	17F/3	93H8371	System board
227	9076 SMP Thin/Wide Node	41L6138	I/O planar
227	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
227	9076/ Power3 SMP High Node	11K0571	NIO Planar
227	9076/ Power3 RIO Drawer	05N5005	RIO Planar (expansion unit)
227	9112/265	09P2420	System Board
240			Token-ring network problem
241			Ethernet network problem
251		8529214 8185219	Cables, parallel printer

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
252		40H6328	Standard 9-pin to 25-pin converter cable
253			Cable, Multiprotocol, EIA-422A, (customer-provided)
254		71F0165	Cable, 4-Port Multiprotocol EIA-232, V.24
256		6339098	Cable, token-ring, 10 ft. (3.04 m)
257		71F0162	Cable, 4-Port Multiprotocol, V.35
258		40F9897	4-Port Multiprotocol cable
259		6323741	Cable, async EIA-232D, V.24
260		71F0164	Cable, 4-Port Multiprotocol, X.21
261		1749352	RS/232 Interposer
262		00F5524	8-Port Multiport Interface Cable
263		12H1204	Terminal cable, EIA-232
266		59F3432	RJ-45 to DB-25 Converter Cable
267		81F8570	Cable assembly, 4-port Multiprotocol jumper
271		07F3151 53F3926	Cable, X.25 attachment cable, X.21 (3 m) Cable, X.25 attachment cable, X.21 (6 m)
272		07F3160 53F3927	Cable, X.25 attachment cable, V.24 (3 m) Cable, X.25 attachment cable, V.24 (6 m)
273		07F3171 53F3928	Cable, X.25 attachment cable, V.35 (3 m) Cable, X.25 attachment cable, V.35 (6 m)
276		31F4221	Cable, SCSI controller cable
277	17S/70	 93H2455 07L7005 93H2485 52G4291 06H6036 52G4233 73H3142	Internal SCSI Signal Cable problem SCSI Cable Media Bay to SCSI slot 2 I35 SCSI Cable, slot 9 to Redrive Card SCSI Cable, I35 SCSI Card to Card SCSI Cable, SCSI-2 to SE/SE SCSI Redrive Card (0.6 m) SCSI Cable, SCSI-2 to SE/SE SCSI Redrive Card (1.0 m) SCSI Cable, SCSI-2 to SE/SE SCSI Redrive Card (2.5 m) SCSI Cable, SCSI-2 to Bulkhead **Note:** Consult the 17S/70 Service Guide before ordering replacement cables.
277	17S/7A	93H2455 06H6876	SCSI Cable Media Bay to SCSI Adapter SCSI Card to Backplane **Note:** Consult the 17S/7A Service Guide before ordering replacement cables.
277	17S/80 17S/85	93H2455 06H6876	SCSI Cable Media Bay to SCSI Adapter SCSI Card to Backplane **Note:** Consult the 17S/80 or 17S/85 Service Guide before ordering replacement cables.
277	24	12H1169	Cable, Internal SCSI, 7-drop

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
277	256F/0 256F/1	04N4265	Internal SCSI cable
277	25F/3	73H3596	Cable, Internal SCSI, 7-drop
277	25F/4	93H3490	Cable, Internal SCSI, 7-drop
277	25F/5	73H3596	Cable, Internal SCSI, 7-drop
277	25F/8	04N4265	Internal SCSI cable
277	266H/0 266H/1	41L5519	I/O drawer internal SCSI cable
277	266M/1	31F4223	I/O drawer internal SCSI cable
277	26B/8	21P3951	Cable, internal SCSI
277	26H/1	73H3596	Cable, Internal SCSI, 7-drop
277	26H/5	93H9613 52G4291 52G4233 06H6876	Cable, Internal SCSI, 4-drop Cable, SCSI-2 Cable, SCSI Cable, SCSI
277	26H/7	93H9613 52G4291 52G4233 06H6876	Internal SCSI Signal Cable problem Cable, Internal SCSI, 4-drop Cable, SCSI-2 Cable, SCSI Cable, SCSI
277	26H/8	41L5519	I/O drawer internal SCSI cable
277	26M/8	31F4223	I/O drawer internal SCSI cable
277	286/C1 286/E1	21P6655	SCSI Cable
277	286/C4 286/E4	09P5889 09P5895 09P5888 09P5869 09P2808	Cable, SCSI 68-pin Cable, SCSI 50-pin Cable, DASD Power 5-pin Cable, External SCSI 68-pin Cable, Internal SCSI Port (SCSI Cable Media Bay to SCSI Adapter
277	296/C3 296/E3	00P5684 97P2313	SCSI Drive Backplane Removable Media Backplane
277	386/M2	09P3876	System Backplane
277	396/51	44P2165	SCSI cable, media/DASD
277	406/1D	11P2349 11P2350	SCSI Cable for Media Subsystems Front Component SCSI Cable for Media Subsystems Rear Component
277	43/14 43/15	73H0435	Cable, Internal SCSI, 4-drop
277	43/24	40H7572	Cable, Internal SCSI, 4-drop
277	43/24	93H6151	Ultra SCSI Cable assembly (optional)
277	43/26 43/27	97H9322 01K6497	Cable, Internal SCSI, 4-drop Cable, Internal SCSI Pigtail

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
277	441/7	41L6178	Cable, Internal SCSI, 7-drop
277	442/7	97H9322 01K6497	Cable, Internal SCSI, 4-drop Cable, Internal SCSI Pigtail
277	46B/5	24L2667	Cable, internal SCSI
277	7236 MediaStreamer	93H6435 93H6629	SCSI Cable SCSI ID Cable
277	17F/3	93H8972	Cable Internal SCSI, 3-drop
277			Generic SCSI Cable (external) **Note:** For FRU part number refer to the system unit's service guide. If the cable is after market refer to it's service documentation.
277	9076 SMP Thin/Wide Node	08J6105 11J5177 08J6111	Cable, Internal SCSI, 2-drop Cable, Internal SCSI, 4-drop Alternate DASD Cabling
277	9076/ Power3 SMP Thin/Wide Node	08J6105 11J5177 08J6111	Cable, Internal SCSI, 2-drop Cable, Internal SCSI, 4-drop Alternate DASD Cabling
277	9112/265	21P6655	SCSI Cable
279			PTC resistor has been tripped **Note:** Refer to the PTC Tripping section in "SCSI-2 Single-Ended Adapter PTC Failure Isolation Procedure" on page 3 of this manual.
282	17S/70	97H7696	System Backplane Assembly
282	17S/7A	97H7696	System Backplane Assembly
282	17S/80 17S/85	23L7598	System Backplane Assembly
282	256F/0 256F/1 25F/8	04N4555	SCSI backplane
282	266H/0 266H/1 26H/8	43L5274	CEC drawer backplane
282	26M/8	04N3023	CEC drawer backplane
282	266M/1	04N3524	CEC drawer backplane
282	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
282	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
282	386/M2	00P3876	System Backplane
282	396/51	00P4603	System Backplane
282	406/71 406/81	11P3046	System Backplane
287	17S/70	93H8714	I/O Drawer 3/4 Power Supply

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
287	17S/7A	08L1336	I/O Drawer power supply
287	17S/80 17S/85	08L1336	I/O Drawer power supply
287	266H/0 266H/1 266M/1 26H/8 26M/8	11K0812	I/O drawer power supply
287	296/C3 296/E3	53P5617	AC Power Supply
287	406/1D	11P3582	I/O Drawer DCA
287	11D/10	09P3354	AC Power Supply
287	11D/20	53P4832	Power Supply
287	9076/ Power3 RIO Drawer	12K0446 31L8752	Power Supply Supervisor Card
289	17S/70	07L7178	I/O Drawer 1/4 Power Supply
289	17S/7A	08L1336	I/O Drawer Power supply
289	17S/80 17S/85	08L1336	I/O Drawer Power supply
289	266H/0 266H/1 266M/1 26H/8 26M/8	11K0812	I/O drawer power supply
287	296/C3 296/E3	53P5617	AC Power Supply
289	406/1D	11P3582	I/O Drawer DCA
289	11D/10	09P3354	AC Power Supply
289	11D/20	53P4832	Power Supply
289	9076/ Power3 RIO Drawer	12K0446 31L8752	Power Card Supervisor Card
292	17S/70	94H1268	Host - PCI Bridge problem I/O planar
292	17S/7A	08L0103	I/O planar
292	17S/80 17S/85	08L1438	I/O planar
292	24E/2	40H6616 03N3989	CPU card (100 MHz) CPU card (233 MHz)
292	24E/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
292	256F/0 256F/1	43L5269	System board

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
292	25F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
292	25F/4	11H7517 41L6111	CPU card (166 MHz) CPU card (233 MHz)
292	25F/5	41L5106	I/O board
292	25F/8	43L5269	System board
292	266H/0 266H/1 266M/1	04N6228	RIO adapter
292	26B/8	00P1859	I/O board
292	26H/1	11H7517	CPU card (166 MHz)
292	26H/5	41L5106	I/0 board
292	26H/7	08L0617	Host - PCI Bridge problem I/O planar
292	26H/8	04N6228	RIO adapter
292	26M/8	04N3687	CEC RIO adapter
292	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
292	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
292	386/M2	00P4062	Service Processor/PCI Backplane
292	396/51	00P4603	System Backplane
292	406/1D	44P0199	!/O Planar
292	286/C1 286/E1	09P2420	System Board
292	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
292	43/15	41L5912	375 MHz System board
292	43/24	11H7517 41L6111	166 MHz Processor and Cache Card 233 MHz Processor and Cache Card
292	43/26	41L5511	I/O board
292	43/27	41L6013	I/O board
292	441/7	41L5721 09P0037	System board, class A System board, class B
292	442/7	41L6013	I/O board
292	46B/5	41L5912	375 MHz System board
292	11D/10	09P5912	I/O Drawer Backplane
292	11D/20	53P3472	PCI Planar

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
292	17F/3	73H3614 93H2431 03N3989	CPU card (133 MHz) CPU card (166 MHz) CPU card (233 MHz)
292	9076 SMP Thin/Wide Node	07L9718 41L6138 93H3316	CPU chassis system board CPU chassis I/O planar I/O chassis connection card
292	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988 03N2866 03N3368	CPU chassis, system board (200 MHz) CPU chassis, system board (375 MHz) CPU chassis, I/O planar (200 MHz) CPU chassis, I/O planar (375 MHz)
292	9112/265	09P2420	System Board
293			PCI - PCI Bridge problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221.
294			MPIC Interrupt Controller problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221..
295			PCI - ISA Bridge problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221..
296			PCI Device or Adapter problem The FRU can only be identified by it's location code reported by diagnostics.
297		93H6055	Texture memory module for the GXT800P Graphics Adapter
298		93H6057	Base memory module for the GXT800P Graphics Adapter
2C3		93H5263 93H5264 93H5265 93H5267	2-Port Multiprotocol adapter cable V.24 2-Port Multiprotocol adapter cable V.35 2-Port Multiprotocol adapter cable V.36 2-Port Multiprotocol adapter cable X.21
2C4	17S/70	97H7696	System Bus Connector problem System Backplane Assembly
2C4	17S/7A	97H7696	System Backplane Assembly
2C4	17S/80 17S/85	23L7598	System Backplane Assembly
2C4	256F/0 256F/1	43L5269	System board
2C4	25F/5	07L9718	System board
2C4	25F/8	43L5269	System board
2C4	266H/0 266H/1	43L5274	CEC drawer backplane
2C4	266M/1	04N3524	CEC drawer backplane
2C4	26B/8	08L988	System board
2C4	26H/5	07L9718	System board
2C4	26H/7	08L0988	System board
2C4	26H/8	43L5274	CEC drawer backplane

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2C4	26M/8	04N3023	CEC drawer backplane
2C4	286/C1 286/E1	09P2420	System Board
2C4	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2C4	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2C4	386/M2	09P3876	System Backplane
2C4	396/51	00P4603	System Backplane
2C4	406/71 406/81	11P3046	System Backplane
2C4	43/26	08L1303	System board
2C4	43/27	08L0988	System board
2C4	441/7	41L5721 09P0037	System board, class A System board, class B
2C4	442/7	08L0988	System board
2C4	9076 SMP Thin/Wide Node	07L9718	CPU chassis system board
2C4	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988	CPU chassis, system board (200 MHz) CPU chassis, system board (375 MHz)
2C4	9112/265	09P2420	System Board
2C5	17S/70	19H0289	32 MB Memory Module problem 32 MB Memory Module
2C5	25F/5	07L7729	32 MB Memory Module
2C5	26H/5	07L7729	32 MB Memory Module
2C5	26H/7	07L7729	32 MB Memory Module
2C5	43/26	42H2773	32 MB Memory Module
2C6	256F/0 256F/1	07L7729 93H4702 07L9030 10L5417 07L9758 09P0335	32 MB memory module 128 MB memory module 256 MB memory module 512 MB memory module F/C 4131 (Cannot be mixed with F/C 4100 in a quad or in a pair if memory DIMMs are installed on a 1-way CPU card) 512 MB memory module F/C 4100 (Cannot be mixed with F/C 4131 in a quad or in a pair if memory DIMMs are installed on a 1-way CPU card) 1 GB memory module
2C6	25F/5	93H4702	128 MB Memory Module problem 128 MB Memory Module

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2C6	25F/8	07L7729 93H4702 07L9030 10L5417 07L9758	32 MB memory module 128 MB memory module 256 MB memory module 512 MB memory module F/C 4131 (Cannot be mixed with F/C 4100 in a quad or in a pair if memory DIMMs are installed on a 1-way CPU card) 512 MB memory module F/C 4100 (Cannot be mixed with F/C 4131 in a quad or in a pair if memory DIMMs are installed on a 1-way CPU card)
2C6	266H/0 266H/1	07L7729 93H4702 07L9030 10L5417 07L9758 09P0335	32 MB memory module 128 MB memory module 256 MB memory module 512 MB memory module F/C 4131 (Cannot be mixed with F/C 4100 in a quad or in a pair if memory DIMMs are installed in a 1-way CPU card) 512 MB memory module F/C 4100 (Cannot be mixed with F/C 4131 in a quad or in a pair if memory DIMMs are installed in a 1-way CPU card) 1 GB memory module
2C6	266M/1	07L7729 93H4702 07L9030 10L5417 07L9758 09P0466	32 MB memory module 128 MB memory module 256 MB memory module 512 MB memory module F/C 4131 (Cannot be mixed with F/C 4100 in an octal) 512 MB memory module F/C 4100 (Cannot be mixed with F/C 4131 in an octal) 1 GB Memory module
2C6	26B/8	93H4702	128 MB Memory Module
2C6	26H/5	93H4702	128 MB Memory Module
2C6	26H/7	93H4702	128 MB Memory Module
2C6	26H/8	07L7729 93H4702 07L9030 10L5417 07L9758 09P0335	32 MB memory module 128 MB memory module 256 MB memory module 512 MB memory module F/C 4131 (Cannot be mixed with F/C 4100 in a quad or in a pair if memory DIMMs are installed in a 1-way CPU card) 512 MB memory module F/C 4100 (Cannot be mixed with F/C 4131 in a quad or in a pair if memory DIMMs are installed in a 1-way CPU card) 1 GB memory module

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2C6	26M/8	07L7729 93H4702 07L9030 10L5417 07L9758	32 MB memory module 128 MB memory module 256 MB memory module 512 MB memory module F/C 4131 (Cannot be mixed with F/C 4100 in an octal) 512 MB memory module F/C 4100 (Cannot be mixed with F/C 4131 in an octal)
2C6	286/C1 286/E1	93H4702 09P0550 09P0491	128 MB DIMM 256 MB DIMM 512 MB DIMM
2C6	286/C4 286/E4	53P3224 53P3226 53P3230 53P3232	256 MB DIMM 512 MB DIMM 1 GB DIMM 2 GB DIMM
2C6	296/C3 296/E3	00P5765 00P5767 00P5769 00P5771 00P5773	256 MB DIMM 512 MB DIMM 1024 MB DIMM 1 GB DIMM 2 GB DIMM
2C6	386/M2	53P3226 53P3230 53P3232 53P1636 53P1643	512 MB Memory Module 1 GB Memory Module 2 GB Memory Module 4 GB CUoD DIMM Card 8 GB CUoD DIMM Card
2C6	43/26 43/27	93H4702	128 MB Memory Module
2C6	441/7	93H4702 07L9030 09P0550 07L9758 09P0491	128 MB Memory Module 256 MB Memory Module 256 MB Memory Module 512 MB Memory Module 512 MB Memory Module
2C6	442/7	93H4702	128 MB Memory Module
2C6	9076/ Power3 SMP High Node	93H4702	128 MB Memory Module
2C6	9112/265	09P0550 09P0491	256 MB DIMM 512 MB DIMM
2C7	17S/70	 93H7689 93H7688	Base Memory Card problem Base Memory Card (LH) Base Memory Card (RH)
2C7	256F/0 256F/1	04N4808 44H8167	Base memory card Memory card filler
2C7	25F/5	93H2641	Base Memory Card
2C7	25F/8	04N4808 44H8167	Base memory card Memory card filler
2C7	266H/0 266H/1	04N4808 44H8167	Memory riser card Memory card filler
2C7	266M/1	04N3033	Memory riser card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2C7	26B/8	07L7065	Base Memory Card
2C7	26H/5	93H2641	Base Memory Card
2C7	26H/7	07L7065	Base Memory Card
2C7	26H/8	04N4808 44H8167	Memory riser card Memory card filler
2C7	26M/8	04N3033	Memory riser card
2C7	386/M2	97P3186 00P4050 00P4045	Processor Board (1.2 GHz) Processor Board (1.45 GHz) CUoD Processor Board (1.45 GHz)
2C7	43/26 43/27	07L7065	Base Memory Card
2C7	442/7	07L7065	Base Memory Card
2C7	9076 SMP Thin/Wide Node	93H2641	Base Memory Card
2C7	9076/ Power3 SMP Thin/Wide Node	07L7065	Base Memory Card
2C7	9076/ Power3 SMP High Node	07L6608	Base Memory Card
2C8	17S/70	94H1268	Mezzanine Bus problem I/O planar
2C8	17S/7A	08L0103	I/O planar
2C8	17S/80 17S/85	08L1438	I/O planar
2C8	256F/0 256F/1	43L5269	System board
2C8	25F/5	07L9718 41L5106	System board I/O board
2C8	25F/8	43L5269	System board
2C8	266H/0 266H/1 266M/1	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2C8	26B/8	08L0988 00P1859	System board I/O board
2C8	26H/5	07L9718 1L5106	System board I/O board
2C8	26H/7	08L0988 03N2797	System board I/O board
2C8	26H/8	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2C8	26M/8	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2C8	286/C1 286/E1	09P2420	System Board

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2C8	286/C4 286/E4	00P3166 00P4488 00P5830 00P5290 00P4483	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability) PCI Riser Card (6 slot) PCI Riser Card (4 slot)
2C8	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2C8	386/M2	00P4062	Service Processor/PCI Backplane
2C8	396/51	00P4603	System Backplane
2C8	406/1D	11P2623	I/O Planar
2C8	43/26	08L1303 03N2443	System board I/O board
2C8	43/27	08L0988 41L6013	System board I/O board
2C8	442/7	08L0988 41L6013	System board I/O board
2C8	11D/10	09P5921	I/O Drawer Backplane
2C8	11D/20	53P3472	PCI Planar
2C8	9076 SMP Thin/Wide Node	07L9718 41L6138 93H3316 31L7766	CPU chassis system board CPU chassis I/O planar I/O Chassis connection card SP Switch MX
2C8	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988 03N2866 03N3368 07L8531 31L7766	CPU chassis, system board (200 MHz) CPU chassis, system board (375 MHz) CPU chassis, I/O planar (200 MHz) CPU chassis, I/O planar (375 MHz) I/O Expansion Card SP Switch MX
2C8	9112/265	09P2420	System Board
2C9	17S/70	94H1268	PCI Bus problem I/O planar
2C9	17S/7A	08L0103	I/O planar
2C9	17S/80 17S/85	08L1438	I/O planar
2C9	24E/2 24E/3	93H4808	System board
2C9	256F/0 256F/1	43L5269	System board
2C9	25F/3	93H8371	System board
2C9	25F/4	93H8652	System board
2C9	25F/5	41L5106	I/O board
2C9	25F/8	43L5269	System board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2C9	266H/0 266H/1 266M/1	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2C9	26B/8	00P1859	I/O board
2C9	26H/1	93H8652	System board
2C9	26H/5	41L5106	I/O board
2C9	26H/7	03N2797	PCI Bus problem I/O board
2C9	26H/8	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2C9	26M/8	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2C9	286/C1 286/E1	09P2420	System Board
2C9	286/C4 286/E4	00P5290 00P4483	PCI Riser Card (6 slot) PCI Riser Card (4 slot)
2C9	296/C3 296/E3		PCI Riser Card
2C9	386/M2	00P4062	Service Processor/PCI Backplane
2C9	396/51	00P4603	System Backplane
2C9	406/1D	11P2623	I/O Planar
2C9	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
2C9	43/15	41L5912	375 MHz System board
2C9	43/24	11H7516	166 MHz System board
2C9	43/26	03N2443	I/O board
2C9	43/27	41L6013	I/O board
2C9	441/7	41L5721 09P0037	System board, class A System board, class B
2C9	442/7	41L6013	I/O board
2C9	46B/5	41L5912	375 MHz System board
2C9	11D/10	09P592	I/O Drawer Backplane
2C9	11D/20	53P3472	PCI Planar
2C9	17F/3	93H8371	System board
2C9	9076 SMP Thin/Wide Node	41L6138 93H3316 93H3202	I/O planar Expansion I/O connection card PCI Expansion I/O planar **Note:** Suspect planar associated with the failing device.

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2C9	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988 03N2866 03N3368 07L8531 31L7766	CPU chassis, system board (200 MHz) CPU chassis, system board (375 MHz) CPU chassis, I/O planar (200 MHz) CPU chassis, I/O planar (375 MHz) I/O Expansion Card SP Switch MX
2C9	9076/ Power3 SMP High Node	11K0571	NIO Planar
2C9	9076/ Power3 RIO Drawer	05N5005	RIO Planar
2C9	9112/265	09P2420	System Board
2CC		09P0335	1 GB Memory Module
2CD		07L9030 09P0550	256 MB Memory Module 256 MB Memory Module
2CE		11K9758 09P0491	512 MB Memory Module 512 MB Memory Module
2D0			ISA adapter or integrated device
2D1	25F/5	41L5106	ISA Bus problem I/O board
2D1	26B/8	00P1859	I/O board
2D1	26H/5	41L5106	I/O board
2D1	26H/7	30N2797	I/O board
2D1	286/C1 286/E1	09P2420	System Board
2D1	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2C8	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2C9	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2D1	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2D1	43/26	03N2443	I/O board
2D1	43/27	41L6013	I/O board
2D1	441/7	41L5721 09P0037	System board, class A System board, class B
2D1	442/7	41L6013	I/O board
2D1	9112/265	09P2420	System Board
2D2	17S/70	94H1268	Mezzanine Bus Arbiter problem I/O planar

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2D2	17S/7A	08L0103	I/O planar
2D2	17S/80 17S/85	08L1438	I/O planar
2D2	256F/0 256F/1	43L5269	System board
2D2	25F/5	41L5106	I/O board
2D2	25F/8	43L5269	System board
2D2	266H/0 266H/1 266M/1	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2D2	26B/8	00P1859	I/O board
2D2	26H/5	41L5106	I/O board
2D2	26H/7	03N2797	I/O board
2D2	26H/8	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2D2	26M/8	04N6228 41L5560 41L5561	RIO adapter Primary I/O backplane Secondary I/O backplane
2D2	286/C1 286/E1	09P2420	System Board
2D2	286/C4 286/E4	00P5290 00P4483	PCI Riser Card (6 slot) PCI Riser Card (4 slot)
2D1	296/C3 296/E3	00P5245	Service Processor
2D2	386/M2	00P4062	Service Processor/PCI Backplane
2D2	396/51	00P4603	System Backplane
2D2	406/1D	11P2623	I/O Planar
2D2	43/26	03N2443	I/O board
2D2	43/27	41L6013	I/O board
2D2	441/7	41L5721 09P0037	System board, class A System board, class B
2D2	442/7	41L6013	I/O board
2D2	11D/10	09P5921	I/O Drawer Backplane
2D2	11D/20	53P3472	PCI Planar
2D2	9076 SMP Thin/Wide Node	07L9718	CPU chassis system board
2D2	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988	System board (200 MHz) System board (375 MHz)
2D2	9076/ Power3 SMP High Node	11K0571	NIO planar
2D2	9076/ Power3 RIO Drawer	05N5005	RIO planar
2D2	9112/265	09P2420	System Board
2D3	17S/70	03N3523	Service Processor Card

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2D3	17S/7A	03N3523	Service Processor Card
2D3	17S/80 17S/85	11K0301	Service Processor Card
2D3	256F/0 256F/1	43L5269	System board
2D3	25F/5	08L0442	Service Processor **Note:** The Service Processor can fail diagnostics if the firmware levels between the system and service processor are not compatible. Check the levels of the system and service processor firmware. Compatible levels are listed in update package documentation. If the firmware levels are compatible and the problem persists, then replace the Service Processor card.
2D3	25F/8	43L5269	System board
2D3	266H/0 266H/1 266M/1	41L5560	Primary I/O drawer backplane
2D3	26B/8	00P1859	I/O board
2D3	26H/5	08L0449	Service Processor **Note:** The Service Processor can fail diagnostics if the firmware levels between the system and service processor are not compatible. Check the levels of the system and service processor firmware. Compatible levels are listed in update package documentation. If the firmware levels are compatible and the problem persists, then replace the Service Processor card.
2D3	26H/7	03N2797	I/O board
2D3	26H/8 26M/8	41L5560	Primary I/O drawer backplane
2D3	286/C1 286/E1	09P2420	System Board
2D3	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2D3	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5684	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor Card
2D3	386/M2	00P4062	Service Processor/PCI Backplane
2D3	396/51	09P6222	Service Processor Card
2D3	396/51	00P4603	System Backplane
2D3	406/71 406/81	09P2435	Primary I/O Book
2D3	43/26	03N2443	I/O board
2D3	43/27	41L6013	I/O board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2D3	441/7	41L5721 09P0037	System board, class A System board, class B
2D3	442/7	41L6013	I/O board
2D3	9076 SMP Thin/Wide Node	08L0442	Service Processor **Note:** The Service Processor can fail diagnostics if the firmware levels between the system and service processor are not compatible. Check the levels of the system and service processor firmware. Compatible levels are listed in update package documentation. If the firmware levels are compatible and the problem persists, then replace the Service Processor card.
2D3	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
2D3	9076/ Power3 SMP High Node	11K0571	NIO planar
2D3	9112/265	09P2420	System Board
2D4	17S/70	94H1268	System/SP Interface Logic problem I/O planar
2D4	17S/7A	08L0103	I/O planar
2D4	17S/80 17S/85	08L1438	I/O planar
2D4	256F/0 256F/1	43L5269	System board
2D4	25F/5	41L5106	I/O board
2D4	25F/8	43L5269	System board
2D4	266H/0 266H/1 266M/1	41L5560	Primary I/O drawer backplane
2D4	26B/8	00P1859	I/O board
2D4	26H/5	41L5106	I/O board
2D4	26H/7	03N2797	I/O board
2D4	26H/8 26M/8	41L5560	Primary I/O drawer backplane
2D4	286/C1 286/E1	09P2420	System Board
2D4	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2D7	296/C3 296/E3	53P6230	Operator Panel
2D4	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2D4	386/M2	00P4062	Service Processor/PCI Backplane

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2D4	396/51	09P6222	Service Processor Card
2D4	396/51	09P6222	Service Processor Card
2D4	406/71 406/81	09P2435	Primary I/O Book
2D4	43/26	08L0633	I/O board
2D4	43/27	41L6013	I/O board
2D4	441/7	41L5721 09P0037	System board, class A System board, class B
2D4	442/7	41L6013	I/O board
2D4	9076 SMP Thin/Wide Node	41L6138	I/O planar
2D4	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) /O planar (375 MHz)
2D4	9076/ Power3 SMP High Node	11K0571	NIO planar
2D4	9112/265	09P2420	System Board
2D5	17S/70	03N3523 94H1268	SP Primary I/O bus problem Service Processor Card I/O planar
2D5	17S/7A	03N3523 08L0103	Service Processor Card I/O planar
2D5	17S/80 17S/85	11K0301 08L1438	Service Processor Card I/O planar
2D5	256F/0 256F/1	43L5269	System board
2D5	25F/5	41L5106 08L0442	I/O board Service Processor
2D5	25F/8	43L5269	System board
2D5	266H/0 266H/1 266M/1	41L5560	Primary I/O drawer backplane
2D5	26B/8	00P1859	I/O board
2D5	26H/5	41L5106 08L0449	I/O board Service Processor
2D5	26H/7	03N2797	I/O board
2D5	26H/8 26M/8	41L5560	Primary I/O drawer backplane
2D5	286/C1 286/E1	09P2420	System Board
2D5	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2D4	296/C3 296/E3		CEC Backplane

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2D5	296/C3 296/E3		System Backplane
2D5	386/M2	00P4062	Service Processor/PCI Backplane
2D5	396/51	09P6222	Service Processor Card
2D5	396/51	09P6222	Service Processor Card
2D5	406/71 406/81	09P2435	Primary I/O Book
2D5	43/26	03N2443	I/O board
2D5	43/27	41L6013	I/O board
2D5	441/7	41L5721 09P0037	System board, class A System board, class B
2D5	442/7	41L6013	I/O board
2D5	9076 SMP Thin/Wide Node	41L6138	I/O planar
2D5	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
2D5	9076/ Power3 SMP High Node	11K0571 03N4184 07L6608	NIO planar System planar Base memory card
2D5	9112/265	09P2420	System Board
2D6	17S/70	03N3523	Service Processor Card
2D6	17S/7A	03N3523	Service Processor Card
2D6	17S/80 17S/85	11K0301	Service Processor Card
2D6	256F/0 256F/1	43L5269	System board
2D6	25F/8	43L5269	System board
2D6	266H/0 266H/1 266M/1 26H/8 26M/8	41L5560	Primary I/O drawer backplane
2D6	286/C4 286/E4	00P4488 00P5830	System Board (with RIO capability) System Board (with RIO-2 capability)
2D5	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2D6	296/C3 296/E3		CEC Backplane
2D6	396/51	09P6222	Service Processor Card
2D6	406/71 406/81	09P2435	Primary I/O Book
2D6	9076/ Power3 SMP High Node	11K0571	NIO planar

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2D7	256F/0 256F/1	43L5269	System board
2D7	266M/1	24L1089	Primary I/O Operator Panel
2D7	25F/5	93H2922	VPD Module problem Operator Panel
2D7	25F/8	43L5269	System board
2D7	26B/8	00P1859	I/O board
2D7	26H/5	93H2922	Operator Panel
2D7	26H/7	41L6006	Operator Panel
2D7	26H/7 26M/8	24L1089	Primary I/O Operator Panel
2D7	286/C1 286/E1	09P2420	System Board
2D7	286/C4 286/E4	00P3210	Operator Panel
2D7	296/C3 296/E3	53P6230	Operator Panel
2D7	386/M2	97P2908	Operator Panel
2D7	406/71 406/81	24L1089	Operator Panel
2D7	43/26	03N2443	I/O board
2D7	43/27	41L6013	I/O board
2D7	441/7	41L5721 09P0037	System board, class A System board, class B
2D7	442/7	41L6013	I/O board
2D7	9076 SMP Thin/Wide Node	41L6138	I/O planar
2D7	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
2D7	9076/ Power3 SMP High Node	11K0571	NIO planar (VPD module)
2D7	9112/265	09P2420	System Board
2D9	17S/70	94H1268	Power Controller problem I/O planar
2D9	17S/7A	08L0103	I/O planar
2D9	17S/80 17S/85	08L1438	I/O planar
2D9	256F/0 256F/1	43L5269	System board
2D9	25F/5	41L5106	I/O board
2D9	25F/8	43L5269	System board
2D9	266H/0 266H/1 266M/1	41L5560 41L5561	Primary I/O drawer backplane Secondary I/O drawer backplane

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2D9	26B/8	00P1859	I/O board
2D9	26H/5	41L5106	I/O board
2D9	26H/7	03N2797	I/O board
2D9	26H/8 26M/8	41L5560 41L5561	Primary I/O drawer backplane Secondary I/O drawer backplane
2D9	286/C1 286/E1	09P2420	System Board
2D9	286/C4 286/E4	09P2702	PCI Riser Card
2D7	296/C3 296/E3	53P6230	Operator Panel
2D7	296/C3 296/E3	53P6230	Operator Panel
2D7	296/C3 296/E3	53P6230	Operator Panel
2D7	296/C3 296/E3	53P6230	Operator Panel
2D9	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2D9	386/M2	00P4062	Service Processor/PCI Backplane
2D9	406/1R 40W/42	11P1598	Bulk Power Controller (BPC)
2D9	43/26	03N2443	I/O board
2D9	43/27	41L6013	I/O board
2D9	441/7	41L5721 09P0037	System board, class A System board, class B
2D9	442/7	41L6013	I/O board
2D9	11D/10	09P5921	I/O Drawer Backplane
2D9	11D/20	53P3472	PCI Planar
2D9	9076 SMP Thin/Wide Node	41L6138	I/O planar
2D9	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
2D9	9076/ Power3 SMP High Node	11K0571 05N5775	NIO planar Supervisor card
2D9	9112/265	09P2420	System Board
2E0	17S/70	94H1268	Fan Sensor problem I/O planar
2E0	17S/7A	93H8686	Fan monitoring control card
2E0	17S/80 17S/85	93H8686 97H9465	Fan monitoring control card Power Distribution Board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2E0	256F/0 256F/1	43L5269	System board
2E0	25F/5	41L5106	I/O board
2E0	25F/8	43L5269	System board
2E0	266H/0 266H/1 266M/1	11K1107 41L5415 41L5560	SPCN fan control card Power distribution board Primary I/O backplane
2E0	26B/8	00P1859	I/O board
2E0	26H/5	93H8686	Fan Monitoring Control Card
2E0	26H/7	93H8686	Fan Monitoring Control Card
2E0	26H/8 26M/8	11K1107 41L5415 41L5560	SPCN fan control card Power distribution board Primary I/O backplane
2E0	286/C1 286/E1	09P2420	System Board
2E0	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2D9	296/C3 296/E3		PCI Riser Card
2E0	296/C3 296/E3		CEC Backplane
2E0	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2E0	386/M2	00P4062	Service Processor/PCI Backplane
2E0	396/51	09P6222	Service Processor Card
2E0	406/1R 40W/42	11P1598	Bulk Power Controller (BPC)
2E0	406/71 406/81	09P2435	Primary I/O Book
2E0	43/26	03N0633	I/O board
2E0	43/27	41L6013	I/O board
2E0	441/7	41L5721 09P0037	System board, class A System board, class B
2E0	442/7	41L6013	I/O board
2E0	11D/10	09P5921	I/O Drawer Backplane
2E0	11D/20	53P3472	PCI Planar
2E0	9076 SMP Thin/Wide Node	41L6138	I/O planar
2E0	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2E0	9076/ Power3 SMP High Node	12K0451	Fan control card
2E0	9076/ Power3 RIO Drawer	31L8752 05N5005	Supervisor card RIO planar
2E0	9112/265	09P2420	System Board
2E1	17S/70	94H1268	Thermal Sensor problem I/O planar
2E1	17S/7A	08L0103	I/O planar
2E1	17S/80 17S/85	08L1438	I/O planar
2E1	24	93H4808	System board
2E1	256F/0 256F/1	43L5269	System board
2E1	25F/3	93H8371	System board
2E1	25F/4	93H8652	System board
2E1	25F/5	41L5106	I/O board
2E1	25F/8	43L5269	System board
2E1	266H/0 266H/1 266M/1	41L5560 41L5561 24L1089 24L0955	Primary I/O backplane Secondary I/O backplane Primary I/O drawer operator panel Secondary I/O drawer operator panel
2E1	26B/8	00P1859	I/O board
2E1	26H/1	93H8652	System board
2E1	26H/5	41L5106	I/O board
2E1	26H/7	03N2797	I/O board
2E1	26H/8 26M/8	41L5560 41L5561 24L1089 24L0955	Primary I/O backplane Secondary I/O backplane Primary I/O drawer operator panel Secondary I/O drawer operator panel
2E1	286/C1 286/E1	09P2420	System Board
2E1	286/C4 286/E4	00P3210	Operator Panel
2D9	296/C3 296/E3		PCI Riser Card
2E0	296/C3 296/E3		CEC Backplane
2E1	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2E1	296/C3 296/E3	53P6230	Operator Panel
2E1	386/M2	97P2908	Operator Panel

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2E1	396/51	00P4603	System Backplane
2E1	406/1D	11P2623	I/O Planar
2E1	43/14	93H7142 93H7143 93H6023 93H9334	Thermal Sensor problem 166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
2E1	43/15	41L5912	375 MHz system board
2E1	43/24	11H7516	System board
2E1	43/26	03N2443	I/O board
2E1	43/27	41L6013	I/O board
2E1	441/7	41L5721 09P0037	System board, class A System board, class B
2E1	442/7	41L6013	I/O board
2E1	46B/5	41L5912	375 MHz System board
2E1	11D/10	09P5921	I/O Drawer Backplane
2E1	11D/20	53P3472	PCI Planar
2E1	17F/3	93H8371	System board
2E1	9076 SMP Thin/Wide Node	41L6138	I/O planar
2E1	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
2E1	9076/ Power3 SMP High Node	03N4184 11K0571	System planar (inlet) NIO planar (outlet)
2E1	9076/ Power3 RIO Drawer	12K0446 05N5005 31L8752	Power Supply RIO planar (midrange) Supervisor card
2E1	9112/265	09P2420	System Board
2E2	17S/70	94H1268	Voltage Sensor problem I/O planar
2E2	17S/7A	08L0103	I/O planar
2E2	17S/80 17S/85	08L1438	I/O planar
2E2	256F/0 256F/1	43L5269	System board
2E2	25F/5	41L5106	I/O board
2E2	25F/8	43L5269	System board
2E2	266H/0 266H/1 266M/1	41L5415	Power distribution board
2E2	26B/8	00P1859	I/O board
2E2	26H/5	41L5106	I/O board
2E2	26H/7	03N2797	I/O board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
2E2	26H/8 26M/8	41L5415	Power distribution board
2E2	286/C1 286/E1	09P2420	System Board
2E2	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2E2	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2E2	396/51	00P4603	Service Processor Card
2E2	406/1D	11P2623	I/O Planar
2E2	43/26	03N2443	I/O board
2E2	43/27	41L6013	I/O board
2E2	441/7	41L5721 09P0037	System board, class A System board, class B
2E2	442/7	41L6013	I/O board
2E2	11D/10	09P5921	I/O Drawer Backplane
2E2	11D/20	53P3472	PCI Planar
2E2	9076 SMP Thin/Wide Node	41L6138 46H9165	I/O planar I/O Expansion Interposer Card
2E2	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368 46H9165	I/O planar (200 MHz) I/O planar (375 MHz) I/O Expansion Interposer Card
2E2	9076/ Power3 SMP High Node	11K0571 03N4184 11K0198	NIO Planar 3.3V, +5V, 5SB, +12V, -12V System Planar 2.5V, 3.3V CPU Card 1.8V, 2.5V
2E2	9076/ Power3 RIO Drawer	05N5005	RIO planar
2E2	9112/265	09P2420	System Board
2E3	17S/70	03N3523	Serial Port Controller problem Service Processor Card
2E3	17S/7A	03N3523	Service Processor Card
2E3	17S/80 17S/85	11K0301	Service Processor Card
2E3	256F/0 256F/1	43L5269	System board
2E3	25F/5	41L5106	I/O board
2E3	25F/8	43L5269	System board
2E3	266H/0 266H/1 266M/1	41L5560	Primary I/O drawer backplane
2E3	26B/8	00P1859	I/O board

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2E3	26H/5	41L5106	I/O board
2E3	26H/7	03N2797	I/O board
2E3	26H/8 26M/8	41L5560	Primary I/O drawer backplane
2E3	286/C1 286/E1	09P2420	System Board
2E3	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2E3	386/M2	00P4062	Service Processor/PCI Backplane
2E3	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2E3	386/M2	00P4062	Service Processor/PCI Backplane
2E3	396/51	09P6222	Service Processor Card
2E3	406/71 406/81	09P2435	Primary I/O Book
2E3	43/26	03N2443	I/O board
2E3	43/27	41L6013	I/O board
2E3	441/7	41L5721 09P0037	System board, class A System board, class B
2E3	442/7	41L6013	I/O board
2E3	9076 SMP Thin/Wide Node	41L6138 11J4000 11J5197	I/O planar Supervisor card Power/supervisor interposer cable
2E3	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368 11J4000 11J5197	I/O planar (200 MHz) I/O planar (375 MHz) Supervisor card Power/supervisor interposer cable
2E3	9076/ Power3 SMP High Node	11K0571	NIO planar
2E3	9112/265	09P2420	System Board
2E4	17S/70	03N3523	JTAG/COP Controller problem Service Processor Card
2E4	17S/7A	03N3523	Service Processor Card
2E4	17S/80 17S/85	11K0301	Service Processor Card
2E4	256F/0 256F/1	43L5269	System board
2E4	25F/5	41L5106	I/O board
2E4	25F/8	43L5269	System board

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2E4	266H/0 266H/1 266M/1	41L5560	Primary I/O drawer backplane
2E4	26B/8	00P1859	I/O board
2E4	26H/5	41L5106	I/O board
2E4	26H/7	03N2797	I/O board
2E4	26H/8 26M/8	41L5560	Primary I/O drawer backplane
2E4	286/C1 286/E1	09P2420	System Board
2E4	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
2E4	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
2E2	386/M2	00P4062	Service Processor/PCI Backplane
2E4	396/51	09P6222	Service Processor Card
2E4	406/71 406/81	09P2435	Primary I/O Book
2E4	43/26	03N2443	I/O board
2E4	43/27	41L6013	I/O board
2E4	441/7	41L5721 09P0037	System board, class A System board, class B
2E4	442/7	41L6013	I/O board
2E4	9076 SMP Thin/Wide Node	41L6138	I/O planar
2E4	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
2E4	9076/ Power3 SMP High Node	11K0571 03N4184	NIO Planar (JTAG) System Planar
2E4	9112/265	09P2420	System Board
2E6		40H6595	PCI Differential Ultra SCSI Adapter (4-L)
2E6	17S/80 17S/85 286/C1 286/E1 286/C4 286/E4 406/1D 43/27 441/7 442/7 46B/5	11K0671	PCI Universal Differential Ultra SCSI Adapter (4-U)
2E6	11D/10	09P5921	I/O Drawer Backplane

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2E6	11D/20	53P3472	PCI Planar
2E7			Generic PCI SCSI Adapter
2E8	256F/0	04N5353 23L7785 23L7794	1-way processor card (600 MHz) 2-way processor card (667 MHz) 4-way processor card (667 MHz)
2E8	256F/1	04N5353 23L7785 23L7794 23L7799	1-way processor card (600 MHz) 2-way processor card (667 MHz) 4-way processor card (667 MHz) 6-way processor card (667 MHz)
2E8	25F/4	11H7517	166 MHz Processor and Cache card
2E8	25F/8	04N4765 03P0062 03P0070 03P0085	1-way processor card 2-way processor card 4-way processor card 6-way processor card
2E8	266M/1	04N6698 21P6381 21P6383	2-way processor card (500 MHz) 2-way processor card (750 MHz) 4-way processor card (750 MHz)
2E8	26B/8	09P0399 09P0143 09P0406 09P4478	Processor card (375 MHz, one-way) Processor card (375 MHz, two-way, 8 M L2) Processor card (375 MHz, two-way, 4 M L2) Processor Card (450 MHz, two-way)
2E8	26H/1	11H7517	166 MHz Processor and Cache card
2E8	26M/8	04N6930 04N6931	2-way processor card 4-way processor card
2E8	286/C1 286/E1	09P2420	System Board
2E8	286/C4 286/E4	00P2974 00P2977 00P2728 00P2731 00P2733 00P2736	Processor Card, 1.0 GHz 1-way Processor Card, 1.0 GHz 2-way Processor Card, 1.2 GHz 1-way Processor Card, 1.2 GHz 2-way Processor Card, 1.45 GHz 1-way Processor Card, 1.45 GHz 2-way
2E4	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2E4	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
2E8	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
2E8	386/M2	97P3186 00P4050 00P4045	Processor Board (1.2 GHz) Processor Board (1.45 GHz) CUoD Processor Board (1.45 GHz)
2E8	396/51	44P1542 44P1544	1.3 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card
2E8	406/71	00P4688 03N3229 09P3217	1.5 GHz 4-way MCM with L3 1.1 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card
2E8	406/81	00P4629 00P4687 03N3223 03N3228 03N3229 09P3217	1.5 GHz 8-way MCM - GQ 1.7 GHz 8-way MCM- GQ 1.3 GHz 4-way MCM with VPD Card 1.3 GHz 8-way MCM with VPD Card 1.1 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card
2E8	43/24	11H7517 41L6111	166 MHz Processor and Cache card 233 MHz Processor and Cache card
2E8	43/27 442/7	11K0171 11K0218	CPU card (375 MHz one-way) CPU card (375 MHz two-way)
2E8	9112/265	09P2420	System Board
301	17S/70	90H9831	Memory 128 MB Card
301	17S/7A	90H9831	Memory 128 MB Card
302	17S/70	90H9834	Memory 256 MB Card
302	17S/7A	90H9834	Memory 256 MB Card
302	17S/80 17S/85	23L7566	Memory 256 MB Card
302	286/C4 286/E4	09P2705	Memory Module 256 MB
303	17S/70	90H9837	512 MB Memory Card
303	17S/7A	90H9837	512 MB Memory Card
303	17S/80 17S/85	23L7570	512 MB Memory Card
303	286/C4 286/E4	09P2706	Memory Module 512 MB
304	17S/70	97H6226	1 GB Memory Card
304	17S/7A	97H6226	1 GB Memory Card
304	17S/80 17S/85	23L7577 04N4994	1 GB Memory Card **Note:** 23L*xxxx* and 04N*xxxx* memory cards cannot be mixed. Replace bad FRUs with FRUs that have the same part number.
304	286/C4 286/E4	09P2707	Memory Module 1GB
305	17S/7A	97H6244	2 GB Memory Card
305	17S/80 17S/85	23L7589 04N5004	2 GB Memory Card **Note:** 23L*xxxx* and 04N*xxxx* memory cards cannot be mixed. Replace bad FRUs with FRUs that have the same part number.

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
305	286/C4 286/E4	53P3232	Memory Module 2 GB
306	17S/70	90H9795 21H7643 21H7377	Remote I/O cable (2 meter) Remote I/O cable (6 meter) Remote I/O cable (15 meter)
306	17S/7A	90H9795 21H7643 21H7377	Remote I/O cable (2 meter) Remote I/O cable (6 meter) Remote I/O cable (15 meter)
306	17S/80 17S/85	90H9795 21H7643 21H7377	Remote I/O cable (2 meter) Remote I/O cable (6 meter) Remote I/O cable (15 meter)
306	266H/0 266H/1 266M/1 26H/8 26M/8	44L0005 97H7490 04N7014	
306	286/C4 286/E4	53P2676 21P5456	Remote I/O-G cable (3.5 meter) Remote I/O-G cable (10 meter)
306	386/M2	09P2631 09P2632 09P2633	Remote I/O-G Cable (1 meter) Remote I/O-G Cable (4 meter) Remote I/O-G Cable (10 meter)
306	396/51	09P2631 09P2632 09P2633	Remote I/O-G Cable (1 meter) Remote I/O-G Cable (4 meter) Remote I/O-G Cable (10 meter)
306	396/51 406/71 406/81	23L3080 44H8873 44H9137	Remote I/O Cable 3-Meter Remote I/O Cable 6-Meter Remote I/O Cable 15-Meter
306	9076/ Power3 SMP High Node	90H9795 21H7377	Remote I/O cable (2 meter) Remote I/O cable (15 meter)
307	17S/70	94H1268	Expansion Unit Logic problem I/O planar
307	17S/7A	08L0103	I/O planar
307	17S/80 17S/85	08L1438	I/O planar
307	266H/0 266H/1 266M/1 26H/8 26M/8	41L5560 41L5561	Primary I/O backplane Secondary I/O backplane
307	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
307	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
307	406/1D	11P2623	I/O Planar

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
307	11D/10	09P5921	I/O Drawer Backplane
307	11D/20	53P3472	PCI Planar
308	17S/70	97H7696	I/O Bridge problem System backplane Assembly
308	17S/7A	97H7696	System Backplane Assembly
308	17S/80 17S/85	23L7598	System Backplane Assembly
308	256F/0 256F/1	43L5269	System board
308	25F/8	43L5269	System board
308	266H/0 266H/1	43L5274	CEC backplane
308	266M/1	04N3867	CEC RIO adapter card
308	26H/8	43L5274	CEC backplane
308	26M/8	04N3867	CEC RIO adapter card
308	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
308	296/C3 296/E3	00P5245	Service Processor
308	386/M2	00P4062	Service Processor/PCI Backplane
308	396/51	09P6222	Service Processor Card
308	406/71 406/81	11P2623	Primary I/O Book
30A		23L7595 04N5011	4 GB Memory Card **Note:** 23L*xxxx* and 04N*xxxx* memory cards cannot be mixed. Replace bad FRUs with FRUs that have the same part number.
30B		04N5531	8 GB Memory Card
440		25L3101	9.1 GB Ultra SCSI Disk Drive only
440	46B/5	03N3873	9.1 GB Ultra SCSI Disk Drive and Carrier
441		25L3100	18.2 GB Ultra SCSI Disk Drive only
441	46B/5	03N3874	18.2 GB Ultra SCSI Disk Drive and Carrier
442		09L3117	9.1 GB Ultra LVD SCSI Disk Drive
443		09L3118	18.2 GB Ultra LVD SCSI Disk Drive
444		41L5235	2-Port Multiprotocol PCI Adapter (ASIC)
447		09P0102 09P5080	PCI 64-Bit Fibre Channel Adapter

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
451	286/C1286/C4 286/E1 286/E4 296/C3 296/E3 386/M2 396/51 406/1D 11D/20	00P2685	73.4 GB 15K RPM Ultra3 SCSI Disk Drive/Carrier
451	2104-DU3/TU3 406/81	55P4103	73 GB SCSI Disk Drive
453	286/C4 286/E4 406/1D 396/51	00P3835 00P2665	146.8 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
453	286/C1 286/E1 286/C4286/E4 9112/265	00P3837 00P2669	146.8 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
453	296/C3 296/E3	00P2665	146.5 GB 10K RPM Ultra3 SCSI Disk Drive/Carrier
541		19P2042 19P1629	7205-440 40 GB Tape Drive 7337-360 40 GB Tape Drive
542		19P0708 19P0207	7208-345 60 GB Tape Drive 7334-410 60 GB Tape Drive
56B		07N6777	36.4 GB 15K RPM Disk Drive
56D	25F/8 256F/0 256F/1 26B/8 286/C4 286/E4296/C3 296/E3 386/M2 396/51 406/1D 11D/20	00P2693	36.5 GB 15K RPM Ultra3 SCSI Disk Drive/Carrier
56D	286/C1 286/E1 9112/265	00P2697	36.5 GB 15K RPM Ultra3 SCSI Disk Drive/Carrier
56D	296/C3 296/E3	00P2693	36.5 GB 15K RPM Ultra3 SCSI Disk Drive/Carrier
56D	2104-DU3/TU3	55P4098	36.5 GB 15K RPM Ultra3 SCSI Disk Drive/Carrier
57B		07N4798 09P4882 07N3172 00P3069	73.4 GB 10K RPM, 68-pin Ultra LVD SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
57D	43 44	07N4799 09P4886 07N3176 00P3071	73.4 GB 10K RPM, 80-pin SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
57D	25F/8 256F/0 256F/1 26B/8 286/C4 286/E4 396/51 406/1D 46B/5	09P3924 09P4888 00P3833 00P3072	73.4 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
57D	286/C1 286/E1 9112/265	09P3928 09P4890	73.4 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
58B		09P3921 09P4874	9.1 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
58D	25F/8 256F/0 256F/1 26B/8 286/C4 286/E4 406/1D 46B/5 396/51	09P3922 09P4435 00P3829 00P3064	18.2 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
58D	2104 286/C1 286/E1 286/C4286/E4 9112/265	09P3823 09P4437	18.2 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
59B	25F/8 256F/0 256F/1 26B/8 396/51 406/1D 46B/5	09P3923 09P4445 00P3831 00P3068	36.4 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
59B	2104 286/C1 286/C4 286/E1 9112/265	09P3826 09P4447	36.4 GB 10K RPM SCSI Disk Drive/Carrier **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
601		07N3675 03N3873 31L8768	9.1 GB LVD 68-pin SCSI Disk Drive 9.1 GB LVD 68-pin Drive/Carrier (U2) 9.1 GB LVD 68-pin Drive/Carrier (SP)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
60B	43 44	07N4813 09P4429 07P3174 00P3061	18.2 GB LVD 10K RPM, 68-pin SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
613		19P4898	8mm 80 GB VXA tape device
61B		07N4833 09P4443 07N3177 00P3067	36.4 GB 10K RPM, 80-pin SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
61B	286/C1 286/E1 286/C4286/E4 9112/265	09P3826	36.4 GB 10K RPM, SCSI Disk Drive/Carrier
61D		00P1519	36.4 GB 10K RPM Drive/Carrier
61E		00P1511	18.2 GB 10K RPM Drive/Carrier
621		03N3301	9.1 GB LVD 80-pin Drive/Carrier (U2)
623		07N3674 03N3874 31L8770	18.2 GB LVD 68-pin SCSI Disk Drive 18.2 GB LVD 68-pin Drive/Carrier (U2) 18.2 GB LVD 68-pin Drive/Carrier (SP)
624		03N3302	18.2 GB LVD 80-pin Drive/Carrier (U2)
62D		07N4823 09P4868	9.1 GB 10K RPM, 68-pin SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
62E		00P1508	9.1 GB 10K RPM Drive/Carrier
636		97H7782	TURBOWAYS 622 Mbps PCI MMF ATM Adapter
637		03N3606	Dual Channel PCI-2 Ultra2 SCSI Adapter
638		22L0027	4.5 GB 16-bit Ultra SCSI SE Disk Drive
639		34L2232 08L1155 06H9389 06H7691 1147429	9.1 GB Ultra SCSI Disk Drive (68-pin) Spacer Tray ID cable Screw
63A			See 62D.
63B		07N4853	9.1 GB 10K RPM, 80-pin SCSI Disk Drive
63C			See 60B.
63D	43 44	07N4843 09P4433 07N3178 00P3063	18.2 GB 10K RPM, 80-pin SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.
63D	286/C1 286/E1 9112/265	09P3823	18.2 GB 10K RPM, SCSI Disk Drive/Carrier
63E		07N4803 09P4439 07N3173 00P3065	36.4 GB 10K RPM, 68-pin SCSI Disk Drive **Note:** The FRU part numbers are interchangeable. Order the FRU part number that matches the FRU part number you are replacing.

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
63F			See 61B.
640		34L2233 44H4644 44H4266	9.1 GB Ultra SCSI Disk Drive (80-pin) Tray Screw
643		09L3116	18.2 GB Ultra LVD SCSI Disk Drive
644		09L3339	36.2 GB Ultra LVD SCSI Disk Drive
646		03N3554	High-Speed Token-Ring PCI Adapter
64A			See 62E.
64B		00P1517	9.1 GB LVD 80-pin Drive/Carrier
64C			See 61E.
64D		00P1520	18.2 GB LVD 80-pin Drive/Carrier
64E		00P1514	36.4 GB 10K RPM Drive/Carrier
64F			See 61D.
650			Unknown disk drive. **Note:** This FFC indicates that the disk drive could not properly configure. Refer to the disk drive FRU part number.
653		59H6923	18.2 GB Ultra-SCSI 16-bit disk drive
655		11K0313	GXT130P PCI Graphics Adapter
657		07L7495	GXT2000P 3D Graphics Adapter PCI
662	256F/0 256F/1	43L5269	System board
662	25F/8	43L5269	System board
662	26B/8	00P1859	I/O board
662	26H/5	41L5106	I/O board, Integrated Ultra2 SCSI
662	26H/7	03N2797	I/O board, Integrated Ultra2 SCSI
662	286/C1 286/E1	09P2420	System Board
662	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
662	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
662	43/26	08L0633	I/O board, Integrated Ultra2 SCSI
662	43/27	41L6013	I/O board
662	441/7	41L5721 09P0037	System board, class A System board, class B
662	442/7	41L6013	I/O board
662	9112/265	09P2420	System Board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
663		87H3734 47L8851 09J8829	IBM ARTIC960RxD PCI Adapter (base card) IBM ARTIC960RxF Adapter IBM ARTIC960 Quad T1/E1 Adapter (daughter card)
664		04N2967	SCSI-2 CD-ROM Drive
667		01K7396	PCI 3-Channel Ultra2 SCSI RAID Adapter
669		41L6396	PCI Gigabit Ethernet Adapter
66C		00P1690	10/100/1000 Base-T Ethernet PCI Adapter
66D		37L6892	PCI 4-Channel Ultra3 SCSI RAID Adapter (Base card only)
66E		04N5967	4.7 GB DVD-RAM drive, Black Bezel
66E		04N5968	4.7 GB DVD-RAM drive, White Bezel
674		31L7567 39H8084	ESCON Channel PCI Adapter Assembly IBM ARTIC960Rx PCI Base Adapter
673		59H6925	18.2 GB Differential SCSI Disk Drive
675		87H3427	IBM ARTIC960Hx PCI Base Adapter
677		23L0023	PCI 32-Bit Fibre Channel Adapter
678		59H3879	12 GB 4 mm SCSI Tape Drive
679		83H7105	4.5 GB SCSI Disk Drive
67B		10J0593	PCI Cryptographic Coprocessor Card
67E		09P3209	GXT135P PCI Graphics Adapter
681		59H6926	9.1 GB Ultra-SCSI 16-bit drive
682		93H8055	20X (MAX) SCSI-2 CD-ROM Drive
683			2105 - All Models
684		93H6563 93H7091	Enhanced Remote Asynchronous Node, 16-Port RS-422 Power supply, remote async node
685		93H2534	GXT120P 2D Video Accelerator Adapter PCI
686		93H6541	8-Port Asynchronous EIA-232/RS-422 Adapter
687		93H6545	128-Port Asynchronous Controller
689	17F/3	83H7105 93H9005	4.5 GB 16-bit Ultra SCSI SE Disk Drive 4.5 GB 16-bit Ultra SCSI SE Disk Drive assembly
68C		19P0802	20 GB 4-mm Tape Drive
68E		00P2368	POWER GXT6000P Graphics Adapter
690		76H2698	9.1 GB 16-bit Ultra SCSI SE Disk Drive
691		93H5513	TURBOWAYS 25 ATM PCI Adapter
692		59H3121 59H3569 59H3569 59H3570 59H3570	7205-311 35 GB DLT Tape Drive 3447-105 35 GB DLT Tape Drive 3447-106 35 GB DLT Tape Drive 7337-305 35 GB DLT Tape Drive 7337-306 35 GB DLT Tape Drive

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
693		93H5839	Eicon ISDN DIVA PRO 2.0 PCI S/T Adapter for PowerPC System
697		21H3890	TURBOWAYS 155 PCI MMF ATM Adapter (1 MB)
698		21H7977	TURBOWAYS 155 PCI UTP ATM Adapter (1 MB)
699		94H0385	3Com Fast EtherLink XL PCI 10/100 Ethernet for PowerPC Microprocessor-based Systems
69B		21P4106	64-bit/66MHz PCI ATM MMF Adapter
69D		21P4112	64-bit/66MHz PCI ATM 155 UTP Adapter
6C9		53P2799	SCSI DVD-ROM Drive
6CC		59H6259 21H8734 05J6446	4.5 GB SSA drive (DCHC/DGHC) in a blue-handled carrier 9.1 GB 1.6-inch SSA drive (DCHC) in a blue-handled carrier 9.1 GB 1.0-inch SSA drive (DGHC) in a blue-handled carrier
6CC	25F/4 25F/5 26H/5 26H/7	03N2837 09P0618	9.1 GB SSA Drive 10K RPM in a Blue Handle Carrier
6CC	25F/8 256F/0 256F/1	03N4139 09P0620	9.1 GB SSA 10KRPM drive in a F80 carrier 18.2 GB SSA 10K RPM drive in a F80 carrier
6CC	25F/8 256F/0 256F/1	09P4943 09P4944 09P4946	9.1 GB SSA 10K RPM drive in a U3 carrier 18.2 GB SSA 10K RPM drive in a U3 carrier 36.4 GB SSA 10K RPM drive in a U3 carrier
6CC	9076 System	12K0576 09P0622 09P0624	9.1 GB SSA 10K RPM drive in an SP carrier 18.2 GB SSA 10K drive in an SP carrier 36.4 GB SSA 10K RPM drive in an SP carrier
700		74G6995	1.1 GB 8-bit SE Disk Drive Assembly
701		74G7006 06H8631 06H7691 27H0380	1.1 GB 16-bit SE Disk Drive Assembly Tray Assembly 4 Position ID Cable Electronics Card Assembly
702		74G7009 74G7015	1.1 GB 16-bit DE Disk Drive Assembly Electronics Card Assembly
703		74G6996 74G6998	2.2 GB 8-bit SE Disk Drive Electronics card assembly

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
704		74G8824 74G7007 06H8631 06H7691 27H0380	2.2 GB 16-bit SE Disk Drive Assembly 2.2 GB 16-bit SE Disk Drive Unit Tray Assembly 4 Position ID Cable Electronics Card Assembly
705		74G7010 74G7015	2.2 GB 16-bit DE Disk Drive Assembly Electronics Card Assembly
706		74G7008 74G8825 06H8631 06H7691 27H0380	4.5 GB 16-bit SE Disk Drive 4.5 GB 16-bit SE Disk Drive Assembly Tray Assembly 4 Position ID Cable Electronics Card Assembly
707		74G7011 74G7015	4.5 GB 16-bit DE Disk Drive Assembly Electronics Card Assembly
709	24 25 26B/8 26H/5 43/14 43/24 43/27 442/7 17F/3	73H3384	128-Port ISA Adapter
711			Unknown adapter
713		87H3427	IBM ARTIC960Hx PCI Base Adapter
721			Unknown SCSI device
722			Unknown disk drive
723			Unknown CD-ROM drive
724			Unknown tape drive
725	Model P50	96G2130 96G2699	Display, 15″, Northern Hemisphere Display, 15″, Southern Hemisphere
725	Model P70	96G3020 96G2150	Display, 17″, Northern Hemisphere Display, 17″, Southern Hemisphere
725	Model P72	21L4570 21L4571 61H0215 61H0216	Display, 17″, Northern (White) Display, 17″, Northern (Black) Display, 17″, Southern (White) Display, 17″, Southern (Black)
725	Model P92	61H0412 61H0223 61H0224 61H0225	Display, 19″, Northern (White) Display, 19″, Northern (Black) Display, 19″, Southern (White) Display, 19″, Southern (Black)
725	Model P200	96G2701 96G3049	Display, 20″, Northern Hemisphere Display, 20″, Southern Hemisphere
725	Model P202	60H0233 60H0234 60H0235 60H0236	Display, 21″, Northern (White) Display, 21″, Northern (Black) Display, 21″, Southern (White) Display, 21″, Southern (Black)
725			Unknown display adapter type

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
726			Unknown input device
727			Unknown async device
728			Unknown parallel device
730			Unknown diskette drive
733		59H3161	140 GB 8 mm Tape Library
734		73H1513	Quad Speed SCSI-2 600 MB CD-ROM Drive
736			Quiet Touch Keyboard and Speaker cable **Note:** The part number is printed on the underside of the keyboard.
741		52G0124 06H8631	1.08 GB SCSI-2 Disk Drive (1-inch high) 8-bit Tray Assembly
742		11H8128	T2 PCI Ethernet Adapter
745	7332/005 7332/110		16 GB DDS-2 Tape Cartridge Auto Loader 48 GB DDS-3 Tape Cartridge Auto Loader **Note:** Service documentation for this device supply the FRU part numbers.
746	17S/70 17S/7A 17S/80 17S/85	73H3562	PCI SCSI SE Adapter problem SCSI-2 Fast/Wide PCI Adapter
746	24	73H3562 93H4808	SCSI-2 Fast/Wide PCI Adapter System board, Integrated SCSI
746	25F/3	73H3562 93H8371	SCSI-2 Fast/Wide PCI Adapter System board, Integrated SCSI
746	25F/4	73H3562 93H8652	SCSI-2 Fast/Wide PCI Adapter System board, Integrated SCSI
746	25F/5	73H3562 07L6594	SCSI-2 Fast/Wide PCI Adapter I/O board, Integrated SCSI
746	26B/8 26H/1	73H3562 93H8652	SCSI-2 Fast/Wide PCI Adapter System board, Integrated SCSI
746	26H/5	73H3562 07L6594	SCSI-2 Fast/Wide PCI Adapter I/O board, Integrated SCSI
746	43/14	73H3562 93H7142 93H7143 93H6023 93H9334	PCI SCSI SE Adapter problem SCSI-2 Fast/Wide PCI Adapter System board 166 MHz, Integrated SCSI System board 200 MHz, Integrated SCSI System board 233 MHz, Integrated SCSI System board 332 MHz, Integrated SCSI
746	43/15	07L8446	375 MHz System board
746	43/24	73H3562 11H7516	SCSI-2 Fast/Wide PCI Adapter System board, Integrated SCSI
746	43/26	73H3562 08L0633	SCSI-2 Fast/Wide PCI Adapter I/O board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
746	43/27	41L6013 73H3562	I/O board SCSI-2 Fast/Wide PCI Adapter
746	441/7	41L5721 09P0037 73H3562	System board, class A, Integrated SCSI System board, class B, Integrated SCSI SCSI-2 Fast/Wide PCI Adapter
746	442/7	41L6013 73H3562	I/O board SCSI-2 Fast/Wide PCI Adapter
746	46B/5	41L5912	375 MHz System board
746	9076 SMP Thin/Wide Node	73H3562 41L6138	SCSI-2 Fast/Wide PCI Adapter I/O board, Integrated SCSI
746	9076/ Power3 SMP Thin/Wide Node	73H3562 03N2866 03N3368	SCSI-2 Fast/Wide PCI Adapter I/O planar (200 MHz), integrated SCSI I/O planar (375 MHz), integrated SCSI
747		93H8407	SCSI-2 Differential Fast/Wide PCI Adapter
749	7331/205		7331 Model 205 8 mm Tape Library **Note:** For FRU numbers, refer to the service documentation for this device.
74A	24	93H4808	Integrated SCSI-2 F/W SE problem System board, Integrated SCSI
74A	25F/3	93H8371	System board, Integrated SCSI
74A	25F/4	93H8652	System board, Integrated SCSI
74A	25F/5	41L5106	I/O board, Integrated SCSI
74A	26B/8	00P1859 73H3384	I/O board SCSI-2 Fast/Wide PCI Adapter
74A	26H/1	93H8652	System board, Integrated SCSI
74A	26H/5	41L5106	I/O board, Integrated SCSI
74A	26H/7	03N2797	I/O board, Integrated SCSI
74A	43/14	73H3562 93H7142 93H7143 93H6023 93H9334	PCI SCSI SE Adapter problem SCSI-2 Fast/Wide PCI Adapter System board 166 MHz, Integrated SCSI System board 200 MHz, Integrated SCSI System board 233 MHz, Integrated SCSI System board 332 MHz, Integrated SCSI
74A	43/15	07L8446	375 MHz System board
74A	43/24	73H3562 11H7516	SCSI-2 Fast/Wide PCI Adapter System board, Integrated SCSI
74A	43/26	73H3562 08L0633	SCSI-2 Fast/Wide PCI Adapter I/O board
74A	43/27	41L6013 73H3562	I/O board SCSI-2 Fast/Wide PCI Adapter
74A	441/7	41L5721 00P1859 73H3562	System board, class A, Integrated SCSI System board, class B, Integrated SCSI SCSI-2 Fast/Wide PCI Adapter
74A	442/7	41L6013 73H3562	I/O board SCSI-2 Fast/Wide PCI Adapter

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
74A	46B/5	41L5912	375 MHz System board
74A	9076 SMP Thin/Wide Node	73H3562 41L6138	SCSI-2 Fast/Wide PCI Adapter I/O board, Integrated SCSI
74A	9076/ Power3 SMP Thin/Wide Node	73H3562 03N2866 03N3368	SCSI-2 Fast/Wide PCI Adapter I/O planar (200 MHz), integrated SCSI I/O planar (375 MHz), integrated SCSI
750		04H8098	Auto LANStreamer® Token-Ring PCI Adapter
751		08L1319 06H6036 52G4233 40H7351	SCSI 32-bit SE F/W RAID Adapter SCSI RAID Cable (1.0 m) SCSI RAID Cable (2.5 m) SCSI RAID Cable (6.0 m)
757		87G4858	SCSI 13 GB 1/4-Inch Tape Drive
759		87G8976	1080 MB Disk Drive
763		31L7847 46H9688 77G0818	SP Switch MX Adapter Wrap Plug Terminator
764		08L0398 46H9688 77G0818	SP System Attachment Adapter Wrap Plug Terminator
772		83H7105	4.5 GB 16-bit SCSI F/W Disk Drive
773		76H2698	9.1 GB 16-bit SCSI F/W Disk Drive
774	7204/339	27H1677	9.1 GB External SCSI DE Disk Drive
775		93H5107	MVP Power Graphics Adapter
776		93H6594	PCI Token-Ring Adapter
777		94H0823	10/100 Base-TX Ethernet PCI Adapter
778		24L0030	POWER GXT3000P 3D Graphics Adapter PCI
77B		03N3952 09P1421	4-Port 10/100 Ethernet Tx PCI Adapter 4-Port 10/100 Ethernet Tx PCI Adapter (new chip)
780		40H1937	X.25 Interface Co-Processor Adapter
781		84F7540 33F8967	Co-Processor Multiport Adapter, Model 2 Daughter Co-Processor Multiport Adapter, Model 2 (Base) **Note:** Replace the daughter card before replacing the base card.
783		76H0473 76H0474 41H8714	24/48 GB DDS-2 4 mm Tape Autoloader (vertical orientation) 24/48 GB DDS-2 4 mm Tape Autoloader (horizontal orientation) Tape Magazine
784		93H7151 93H7152	2.1 GB 8-bit SCSI-2 Disk Drive 2.1 GB 16-bit SCSI-2 Disk Drive
785		40H6632	8-port ISA Async EIA-232/RS-422 Adapter
786		93H6264	GXT250P High Performance Graphics Adapter

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
786		93H6267	GXT255P High Performance Graphics Adapter
787		94H0028	GXT500P Graphics Adapter
788		07L9009	Ultimedia® Video Capture Adapter
789	7209/003	50G0212	External 2.6 GB Rewritable Optical Disk Drive
78B		00P2429	POWER GXT4000P Graphics Adapter
78D		03N4169	GXT300P 2D Graphics Adapter
790			Multi-bus Integrated Ethernet Adapter problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221.
791		74G8824 74G7007 06H8631 06H7691 27H0380	2.2 GB 16-bit SE Disk Drive Assembly 2.2 GB 16-bit SE Disk Drive unit Tray Assembly 4 Position ID Cable Electronics card Assembly
792		83H7105	4.5 GB 16-bit SE Disk Drive Assembly
793		76H2698	9.1 GB 16-bit SE Disk Drive Assembly
795		73H3405 73H3401 73H3413	FDDI LPSAS Adapter (single fiber) FDDI LPDAS Adapter (dual fiber) FDDI UPSAS Adapter (single copper)
799		93H6086 93H3662	2-Port Multiprotocol PCI Adapter 2-Port Multiprotocol PCI Wrap Plug
7C0	24	93H4808	CPU/System Interface System board
7C0	25F/3	93H8371	System board
7C0	25F/4	93H8652	System board
7C0	25F/5	07L9718	System board
7C0	26B/8	08L0988	System board
7C0	26H/1	93H8652	System board
7C0	26H/5	07L9718	System board
7C0	26H/7	08L0988	System board
7C0	286/C1 286/E1	09P2420	System Board
7C0	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
7C0	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
7C0	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
7C0	43/15	41L5912	375 MHz System board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
7C0	43/24	11H7516	166 MHz System board
7C0	43/26	08L1303	CPU/System Interface System board
7C0	43/27	08L0988	System board
7C0	441/7	41L5721 09P0037	System board, class A System board, class B
7C0	442/7	08L0988	System board
7C0	46B/5	41L5912	375 MHz System board
7C0	17F/3	93H8371	System board
7C0	9076 SMP Thin/Wide Node	07L9718	System board
7C0	9076/ Power3 SMP Thin/Wide Node	08L1303 08L0988	System board (200 MHz) System board (375 MHz)
7C0	9112/265	09P2420	System Board
7C1	24	93H4808	Business Audio Subsystem problem System board
7C1	25F/3	93H8371	System board
7C1	25F/4	93H8652	System board
7C1	25F/5	07L9718	System board
7C1	26B/8	00P1859 04N6150	I/O board Operator panel assembly
7C1	26H/1	93H8652	System board
7C1	26H/5	07L9718	System board
7C1	26H/7	08L0988	System board
7C1	286/C1 286/E1	15F8409 21P7166	System Board Operator Panel
7C1	286/C4 286/E4	00P4488 00P5830 21P7166	System Board (with RIO capability) System Board (with RIO-2 capability) Operator Panel
7C1	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 53P6230	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Operator Panel
7C1	43/14	93H7142 93H7143 93H6023 93H9334	166 MHz System board 200 MHz System board 233 MHz System board 332 MHz System board
7C1	43/15	41L5912	375 MHz System board
7C1	43/24	11H7516	166 MHz System board
7C1	43/26	08L1303	System board
7C1	43/27	41L6013 07L7234	I/O board Operator panel
7C1	441/7	41L5721 09P0037	System board, class A System board, class B

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
7C1	442/7	41L6013 07L7234	I/O board Operator panel
7C1	46B/5	41L5912	375 MHz System board
7C1	17F/3	93H8371	System board
7C1	9112/265	09P2420 21P7166	System Board Operator Panel
804		73H2601	8X Speed SCSI-2 CD-ROM Drive
806		07L7113	GXT800P Graphics Adapter
807			SCSI Device Enclosure **Note:** If the resource description on the screen displays: • ″ses″ or ″SCSI Enclosure Services Device,″ use FFC 199. • ″safte″ or ″SCSI Accessed Fault-Tolerant Enclosure Device,″ use FFC 2580.
80c			SSA Adapter problem refer to the *SSA Adapters: User's Guide and Maintenance Information*.
811			Processor Complex being identified.
812			Common Standard Adapter Logic problem **Note:** For type/model and FRU information refer to FFC 227.
814	256F/0 256F/1	43L5269	System board
814	25F/8	43L5269	System board
814	266H/0 266H/1 266M/1 26H/8 26M/8	41L5560	Primary drawer I/O backplane
814	17S/70	03N3523	Service Processor Card problem Service Processor Card **Note:** Unless listed, refer to FFC 221 for type/model and FRU information.
814	17S/7A	03N3523	Service Processor Card **Note:** Unless listed, refer to FFC 221 for type/model and FRU information.
814	17S/80 17S/85	11K0301	Service Processor Card **Note:** Unless listed, refer to FFC 221 for type/model and FRU information.
814	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
814	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
814	386/M2	00P4062	Service Processor/PCI Backplane
814	396/51	09P6222	Service Processor Card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
814	406/71 406/81	09P2435	Primary I/O Book
814	9076/ Power3 SMP High Node	11K0571	NIO Planar
815			Floating Point Processor problem **Note:** For type/model and FRU information refer to FFC 210.
815	9076/ Power3 SMP High Node		**Note:** If the type/model and FRU information is not listed here, refer to FFC 221..
816			Operator Panel Logic problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221..
816	386/M2	00P4062	Service Processor/PCI Backplane
816	396/51	09P6222	Service Processor Card
816	406/71 406/81	09P2435	Primary I/O Book
817	256F/0 256F/1	43L5269	System board
817	25F/8	43L5269	System board
817	266H/0 266H/1 266M/1 26H/8 26M/8	41L5560	Primary drawer I/O backplane
817	17S/70	03N3523	Time of Day Logic problem Service Processor Card **Note:** Unless listed refer to FFC 221 for type/model and FRU information.
817	17S/7A	03N3523	Service Processor Card **Note:** Unless listed refer to FFC 221 for type/model and FRU information.
817	17S/80 17S/85	11K0301	Service Processor Card **Note:** Unless listed refer to FFC 221 for type/model and FRU information.
817	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
817	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970 00P5245	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way) Service Processor
817	386/M2	00P4062	Service Processor/PCI Backplane
817	396/51	09P6222	Service Processor Card
817	406/71 406/81	09P2435	Primary I/O Book

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
817	9076/ Power3 SMP High Node	11K0571	NIO Planar
820			Interprocessor related testing problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
821			Standard Keyboard Adapter problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221.
823			Standard Mouse Adapter problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
823	9076/ Power3 SMP High Node	11K0571	NIO Planar
824			Standard Tablet Adapter problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
824	9076/ Power3 SMP High Node	11K0571	NIO Planar
825	9076/ Power3 SMP High Node	11K0571	NIO Planar
826			Serial Port 1 Adapter problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
826	386/M2	00P4062	Service Processor/PCI Backplane
826	396/51	09P6222	Service Processor Card
826	406/71 406/81	09P2435	Primary I/O Book
826	9076 SMP Thin/Wide Node	11J4000 11J5197 41L6138	Supervisor Card Power/supervisor interposer cable I/O planar
826	9076/ Power3 SMP Thin/Wide Node	11J4000 11J6147 03N2866 03N3368	Supervisor Card Power/supervisor interposer cable I/O planar (200 MHz) I/O planar (375 MHz)
826	9076/ Power3 SMP High Node	11K0571	NIO Planar
827			Built-in Parallel Port Adapter problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
827	9076/ Power3 SMP High Node	11K0571	NIO Planar
828			Standard Diskette Adapter problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
828	386/M2	00P4062	Service Processor/PCI Backplane
828	396/51	09P6222	Service Processor Card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
828	406/71 406/81	09P2435	Primary I/O Book
828	9076/ Power3 SMP High Node	11K0571	NIO Planar
82C		11H6095	S15 Graphics PCI Adapter
830		11H5969	8-Port ISA adapter
831			Serial Port 2 Adapter problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221.
831	9076/ Power3 SMP High Node	11K0571	NIO Planar
836		73H3384	128-Port Async Controller
837		88G3842 93H6549 40H2589 93H7091	Remote Async Node, 16-port EIA-232 Enhanced Remote Async Node, 16-port EIA-232 Rack Mounted Node, 16-port EIA-232 Power Supply, Remote Async Node
840		93H3809	PCI Single-Ended Ultra SCSI Adapter **Note:** If you receive this FFC but are working with Integrated Ultra SCSI see FFC 84A.
844	7135		RAIDiant Array SCSI Subsystem Controller **Note:** Refer to the 7135 documentation.
845	7135		RAIDiant Array SCSI 2.0 GB Disk Drive **Note:** Refer to the 7135 documentation.
846	7135		RAIDiant Array SCSI 1.3 GB Disk Drive **Note:** Refer to the 7135 documentation.
84A	26B/8	00P1859	I/O board
84A	26H/1	93H8652	Integrated Ultra SCSI problem System board, Integrated Ultra SCSI
84A	26H/5	41L5106	I/O board, Integrated Ultra SCSI
84A	26H/7	03N3484	I/O board, Integrated Ultra SCSI
84A	286/C1 286/E1	09P2420	System Board
84A	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
817	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
84A	296/C3 296/E3	00P4958 00P4948 00P4966 00P4970	System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
84A	43/14	93H7142 93H7143 93H6023 93H9334	System board 166 MHz, Integrated Ultra SCSI System board 200 MHz, Integrated Ultra SCSI System board 233 MHz, Integrated Ultra SCSI System board 332 MHz, Integrated Ultra SCSI
84A	43/15	41L5912	375 MHz System board
84A	43/24	11H7516	System board, Integrated Ultra SCSI
84A	43/26	03N2443	I/O board
84A	43/27	41L6013	I/O board
84A	441/7	41L5721 09P0037	System board, class A System board, class B
84A	442/7	41L6013	I/O board
84A	46B/5	41L5912	375 MHz System board
84A	17F/3	93H8371	System board, Integrated Ultra SCSI
84A	9076/ Power3 SMP High Node	11K0571	NIO Planar
84A	9112/265	09P2420	System Board
868			Integrated SCSI I/O Controller problem **Note:** If the type/model and FRU information is not listed here, refer to FFC 221.
868	9076/ Power3 SMP High Node	11K0571	NIO Planar
887	25F/4	93H8652	Integrated Ethernet Adapter problem System board, Integrated Ethernet Adapter
887	25F/5	41L5106	I/O board, Integrated Ethernet Adapter
887	26B/8	00P1859	I/O board
887	26H/1	93H8652	System board, Integrated Ethernet Adapter
887	26H/5	41L5106	I/O board, Integrated Ethernet Adapter
887	26H/7	03N3484	I/O board, Integrated Ethernet Adapter
887	286/C1 286/E1	09P2420	System Board
887	286/C4 286/E4	00P3166 00P4488 00P5830	CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
887	296/C3 296/E3		System Board

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
887	43/14	93H7142 93H7143 93H6023 93H9334	System board 166 MHz, Integrated Ethernet Adapter System board 200 MHz, Integrated Ethernet Adapter System board 233 MHz, Integrated Ethernet Adapter System board 332 MHz, Integrated Ethernet Adapter
887	43/15	41L5912	375 MHz System board
887	43/24	11H7516	System board, Integrated Ethernet Adapter
887	43/26	03N2443	I/O board
887	43/27	41L6013	I/O board
887	441/7	41L5721 09P0037	System board, class A System board, class B
887	442/7	41L6013	I/O board
887	46B/5	41L5912	375 MHz System board
887	9076 SMP Thin/Wide Node	41L6138	I/O planar
887	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
887	9076/ Power3 SMP High Node	11K0571	NIO Planar
887	9112/265	09P2420	System Board
891			Vendor SCSI Adapter
892			Vendor Display Adapter
893			Vendor LAN Adapter
894			Vendor Async Communications Adapter
899			Atape
89c		73H1513	600 MB Double Speed Tray-Loading CD-ROM **Note:** The 2x CD-ROM drive is no longer available. A 4x CD-ROM drive will be shipped as a replacement.
900		93H7983	GXT110P Graphics Adapter
901			Vendor SCSI device
902			Vendor Display
903			Vendor Async device
904			Vendor Parallel device
905			Other Vendor device
908	25F/4 25F/5 43/14 43/15 43/24 43/26 43/27 441/7 442/7	93H2399	POWER GXT1000 Graphics Accelerator Attachment Adapter

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
912		86F0119 86F0125	2.0 GB SCSI-2 DE Disk Drive Differential frame electronics
913		6374682 6374683	1 GB DE Disk Drive, half-height Differential frame electronics
914		16G8492	5 GB 8 mm SCSI DE Tape Drive
915		59H3481	4/8 GB 4 mm Tape Drive
917		86F0767	2.0 GB DE F/W Disk Drive **Note:** If the disk drive is in a 7134 drawer replace with FRU P/N 67G3022.
918		86F0766	2.0 GB 16-bit SCSI SE F/W Disk Drive
921		82G3278 1392090 1394609	101 Key Keyboard problem Keyboard U.S. English Keyboard Cost Reduced English Keyboard cable
921	7040	93H8120	101 Keyboard U.S. English
922		8131596	102 Key Keyboard problem Keyboard, Arabic
922	7040	93H8125	Keyboard, Arabic (ID 238)
922	7040	93H8127	Keyboard, Belgium-French (ID 120)
922		1391414	Keyboard, Belgium-Dutch
922		1391526	Keyboard, Belgium-French
922	7040	93H8126	Keyboard, Belgium-French (ID 120)
922		64F7707	Keyboard, Brazilian Portuguese
922	7040	93H8124	Keyboard, Brazilian Portuguese (ID 275)
922		1399583	Keyboard, Bulgarian
922	7040	93H8128	Keyboard, Bulgarian (ID 442)
922	7040	93H8155	Keyboard, Chinese/US (ID 467)
922		1399570	Keyboard, Czechoslovakian
922	7040	93H8129	Keyboard, Czechoslovakian (ID 243)
922		1391407	Keyboard, Danish
922	7040	93H8130	Keyboard, Danish (ID 159)
922	7040	93H8130	Keyboard, Danish (ID 159)
922	7040	93H8131	Keyboard, Dutch (ID 143)
922		1391511	Keyboard, Dutch/Netherlands
922		1391411	Keyboard, Finnish/Swedish
922		1391402	Keyboard, French
922	7040	93H8132	Keyboard, French(ID 189)
922		82G3279	Keyboard, French-Canadian
922	7040	93H8121 93H8122	Keyboard, French-Canadian (ID 058) Keyboard, French-Canadian (ID 445)
922	7040	93H8133	Keyboard, German (ID 129)

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
922		1391403	Keyboard, German/Austrian
922		1399046	Keyboard, Greek
922	7040	93H8134	Keyboard, Greek (ID 129)
922		1391408	Keyboard, Hebrew
922	7040	93H8135	Keyboard, Hebrew (ID 212)
922		1399581	Keyboard, Hungarian
922	7040	93H8136	Keyboard, Hungarian (ID 208)
922		1391407	102 Key Keyboard problem Keyboard, Icelandic
922	7040	93H8137	Keyboard, Icelandic (ID 197)
922		1393395	Keyboard, Italian
922	7040	93H8138	Keyboard, Italian (ID 142)
922	7040	93H8156	Keyboard, Korea (ID 413)
922		82G3292	Keyboard, Latin American (Spanish)
922	7040	93H8152	Keyboard, Latvia (ID 234)
922		1391409	Keyboard, Norwegian
922	7040	93H8139	Keyboard, Norwegian (ID 155)
922		1391410	Keyboard, Portuguese
922		1399580	Keyboard, Polish
922	7040	93H8140	Keyboard, Polish (ID 214)
922	7040	93H8141	Keyboard, Portuguese (ID 163)
922		1399582	Keyboard, Romania
922	7040	93H8142	Keyboard, Romania (ID 446)
922		1399579	Russian
922	7040	93H8143	Keyboard, Russian (ID 443)
922	7040	93H8144	Keyboard, Serbian (ID 118)
922		1399571	Keyboard, Slovak
922	7040	93H8145	Keyboard, Slovak (ID 245)
922		1391405	Keyboard, Spanish
922	7040	93H8123 93H8146	Keyboard, Spanish (ID 171) Keyboard, Spanish (ID 172)
922	7040	93H8147	Keyboard, Sweden/Finland (ID 153)
922		1395881	Keyboard, Swiss-French
922	7040	93H8148	Keyboard, Swiss French/German (ID 150)
922		1395882	Keyboard, Swiss-German
922	7040	93H8157	Keyboard, Thailand (ID 191)
922		1393286	Keyboard, Turkish (ID 179)
922	7040	93H8149	Keyboard, Turkish (ID 179)
922		8125409	Keyboard, Turkish (ID 440)
922	7040	93H8150	Keyboard, Turkish (ID 440)

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
922		1391406	Keyboard, U.K. English
922	7040	93H8151	Keyboard, Turkish (ID 166)
922	7040	93H8153	Keyboard, US English ISO9995 (ID 103P)
922		06H3048	Keyboard, U.S. OEM
922	7040	93H8154	Keyboard, 106 Japan (ID 194)
922		1394609	Keyboard cable
923		1392090 79F0167 66G0507 06H5286 02G7353	106 keys International Keyboard problem Keyboard, Chinese Keyboard, Japanese-Kanji Japanese, Enhanced Keyboard, Korean Keyboard, Taiwanese
925		93H9113	3-Button Mouse
925	7040	76H5084	3–Button Mouse
926		6247450 74F3130	Tablet, 5083 Model 21 Tablet, 6093 Model 11
927		6247452 74F3140 93H7714	Tablet, 5083 Model 22 Tablet, 6093 Model 12 Tablet, 6093 Model 21
929		39F8227 39F8302	Dials, 6094 Model 10 Cable, Serial Attachment, Power
930		39F8226 39F8302	Lighted Program Function Keyboard (LPFK), 6094 Model 20 Cable, Serial Attachment, Power
935	24 25 43 17 26 406/71 406/81 44 17S/70 17S/7A 17S/80 17S/85	93F2361 76H4091 07L7814	1.44 MB 3.5-inch White Diskette Drive 1.44 MB 3.5-inch Black Diskette Drive 1.44 MB 3.5-inch Diskette Drive
938			Serial HIPPI PCI Adapter **Notes:** 1. Use the number printed above the bar code to order this part. 2. The FRU part number of the wrap plug used with this adapter is 21H3547.
946			Standard Serial Port 3 Adapter problem **Note:** For type/model and FRU information, if not listed here, refer to FFC 221.
946	396/51	09P6222	Service Processor Card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
946	406/71 406/81	09P2435	Primary I/O Book
946	9076/ Power3 SMP High Node	11K0571	NIO Planar
947		84G3491	1000 MB, 16-bit Disk Drive
950			Unknown SCSI device is missing.
951		53F3429 6373521	670 MB SCSI Disk Drive Logic Card **Note:** Exchange the complete drive whenever possible. If extreme data saving measures are necessary, exchange the logic card.
952		53F3427 6373521	355 MB SCSI Disk Drive Logic Card **Note:** Exchange the complete drive whenever possible. If extreme data saving measures are necessary, exchange the logic card.
953		93X0961 93X0901	320 MB SCSI Disk Drive Logic Card and Frame assembly **Note:** Exchange the complete drive whenever possible. Exchange the logic card only when the data on the disk must be saved.
954		00G1948 73F8994	400 MB SCSI Disk Drive Logic Card and Frame assembly **Note:** Exchange the complete drive whenever possible. Exchange the logic card only when the data on the disk must be saved.
955		45G9502	857 MB SCSI Disk Drive
956		6373521	355/670 MB Logic Card.
960		52G0061 31G9756	1.37 GB SCSI Disk Drive Assembly Logic card
962	3161		Use device documentation.
963	3163		Use device documentation.
964		59H2839 59H4120 59H2835 59H2842	20 GB 8 mm SE SCSI Tape Drive (internal,white) 20 GB 8 mm SE SCSI Tape Drive (internal, black) 20 GB 8 mm Diff SCSI Tape Drive (external/white) 400 GB 8 mm Diff Tape Autoloader (No LCD in Bezel/white)
966		93H2136	Media Streamer Audio/Video Decoder Adapter
968		55F9902 55F9909	1 GB SCSI SE Disk Drive Single-Ended Frame Electronics
970	9348		1/2-inch 9-Track Tape Drive Use device documentation

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
971		16G8423	150 MB 1/4-Inch Tape Drive
972		16G8421	2.3 GB 8 mm Tape Drive
973			Other SCSI Tape Drive
974		88G3929	CD-ROM Drive (Type A or Type B bezel)
980	4216		Use the device documentation
981		51G8237	540 MB SCSI-2 Single-Ended Disk Drive
982	3852		Use the device documentation
983	4201		Use the device documentation
984		45G9467	1 GB 8-bit Disk Drive
986		36G0454	2.4 GB SCSI Disk Drive
987		73H1513	600 MB CD-ROM-2 Disk Drive
989		43G1842	200 MB SCSI Disk Drive
990		86F0118	2.0 GB SCSI-2 SE Disk Drive
991		46G2700	525 MB 1/4-Inch SCSI Tape Drive
992	5202		Use the device documentation
993	5204		Use the device documentation
994		59H3159	5/10 GB 8 mm Internal Tape Drive
995		21H5155	1.2 GB 1/4-inch Cartridge Tape Drive
998		8191193	2.0 GB 4 mm SCSI Tape Drive
999	3514 7137		Disk Array Subsystems **Note:** Refer to the 3514 or 7137 documentation
B08		02G7431	Ethernet 10 Base Twisted-pair Transceiver
B09		02G7437	Ethernet/ISO 8802.3 Transceiver (formerly IEEE 802.3)
B10			System board PTC (thermal fuse) **Note:** If a thermal fuse has opened, it should reset within ten minutes after turning the power off. If the thermal fuse does not reset, a faulty device may be drawing excessive power through the fuse.
B31			Unknown keyboard type
B3A			Unidentifiable backplane tied to a SCSI RAID adapter
B54		43G0936 43G0937	128-Port Async Controller Cable, 0.2 m (9 in.) 128-Port Async Controller Cable, 4.6 m (15 ft.)
B69		33F8967	Co-Processor Multiport Adapter, Model 2 (0 MB)
B71		53F2612	8-Port EIA-232-D Multiport, Model 2 Interface Card
B72		53F2615	8-Port EIA-422-A Multiport, Model 2 Interface Card
B73		72F0164	6-Port V.35 Multiport, Model 2 Interface Card
B74		04G5500	6-Port V.21 Multiport, Model 2 Interface Card
B77		53F2662	Co-Processor 1 MB Memory Module
B81		40F9897	Co-Processor Multiport Interface Cable

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
B82		71F0162	Co-Processor Multiport V.35 Cable
B83		71F0164	Co-Processor Multiport X.21 Cable
B88			Generic SCSI I/O Controller **Notes:** 1. If the failing FRU for this FFC is PCI(x), where x is the PCI bus number, 0, 1, ..., refer to FFC 221. 2. Use the location code to identify the failing FRU. Determine if the failing FRU is integrated on the system board. If the failing FRU is integrated use FFC 221. If the failing FRU is not integrated replace the FRU identified by its description that is shown with the location code for SCSI and SCSI-2 adapter. Choose the FFC for the appropriate SCSI I/O controller. 3. Check the SCSI controller fuse or PTC resistor before exchanging the system board. Refer to Service Hints in “SCSI-2 Single-Ended Adapter PTC Failure Isolation Procedure” on page 3. 4. Check that the SCSI disable jumper is in the enabled position. 5. Check the FRU number of the installed external terminator: Low density - 51G7736 High density - 51G7737
C11		36G4280	2.4 GB SCSI Disk Drive Field Repair Assembly **Note:** The field repair assembly includes one disk drive, the electronics planar, and the 5-1/4 inch form factor ″cage.″ The remaining ″good″ drive is removed from the failed disk drive assembly and installed in the field repair assembly to create a complete dual-disk drive assembly. If saving data is critical, as a last resort try installing the ″bad″ drive in place of one of the two ″good″ drives in the now-complete field repair assembly. If the ″bad″ drive operates satisfactorily, the problem was probably in the electronics planar.
C22		94H0779	RJ-45 to DB25 Converter Cable Kit
C24		54G3384 55G3384	Fiber Optic Cables for PCI Fibre Channel Adapter 6.7 m 12.8 m
C33	25F/4 7250/002	73H4034	GPSS Card
C34	25F/4 7250/002	11H8490	RSS Card (without memory sockets)
C35	25F/4 7250/002	65G4887	VOO Card
C36	25F/4 7250/002	65G4892	Attachment Adapter Cable
C44	25F/4 7250/002	65G4894	VOO/RSS Crossover Cable

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
C45	25F/4 (Base and AG memory) 7250/002	65G4889	12M VRAM Memory Module
C46	25F/4 (Base and AG memory) 7250/002	65G4890	16M VRAM Memory Module
C47	25F/4 (TX Memory) 7250/002	65G4891	16M DRAM Memory Module
C48	25F/4 7250/002	65G4893	RSS/GPSS Crossover Card
C94		68X6356 87H3621	IBM ARTIC960 4 MB Memory Module IBM ARTIC960 8 MB Memory Module
C95		87H3413 87H3428 87H3701 09J8829 51H8702	IBM ARTIC960 4-Port Selectable interface Board IBM ARTIC960 4-Port T1/E1 interface Card IBM ARTIC960Hx DSP interface card IBM ARTIC960 Quad T1/E1 interface card IBM ARITC960 PCI Adapter interface Board
C97		87H3502 87H3311 5605670	IBM ARTIC960 4-Port T1/E1 Interface Card Wrap Plug IBM ARTIC960 4-Port Selectable Interface Board Wrap Plug ESCON Wrap Plug **Note:** A wrap plug is shipped with each adapter and cable.
C98		87H3405 87H3396 87H3408 87H3399 87H3402 87H3518 87H3515	IBM ARTIC960 4-Port Selectable EIA-232 Cable IBM ARTIC960 4-Port Selectable RS-449 Cable IBM ARTIC960 4-Port Selectable X.21 Cable IBM ARTIC960 4-Port Selectable V.35 Cable IBM ARTIC960 4-Port Selectable EIA-530 Cable IBM ARTIC960 4-Port T1 RJ-45 Cable IBM ARTIC960 4-Port E1 RJ-45 Cable **Note:** A wrap plug is shipped with each adapter and cable.
D01	17S/70	90H9694 90H9662	Generic L2 Cache problem Processor Card (4x) (Type 2) Processor Card (4x) (Type 1)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
D01	17S/7A	08L1474 08L1473	Processor Card (type 2) (262 MHz) Processor Card (type 1) (262 MHz)
D01	17S/80	23L7434 23L7447	Processor Card (Type 1 RH) Processor Card (Type 2 LH)
D01	17S/85	21P4511 21P4517	Processor Card (Type 1 RH) Processor Card (Type 2 LH)
D01	24E/2	40H6616 03N3989	CPU Card (100 MHz) CPU Card (233 MHz)
D01	24E/3	73H3614 93H2431 03N3989	CPU Card (133 MHz) CPU Card (166 MHz) CPU Card (233 MHz)
D01	256F/0	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz)
D01	256F/1	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301 23L7799 53P1334	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz) 6-way processor card (668 MHz) 6-way processor card (750 MHz)
D01	25F/3	73H3614 93H2431 03N3989	CPU Card (133 MHz) CPU Card (166 MHz) CPU Card (233 MHz)
D01	25F/4	11H7517 93H5163	CPU Card (166 MHz) CPU Card (233 MHz)
D01	25F/5	93H2679 73H4768 93H9018 93H8945	166 MHz CPU Card (1-way) 166 MHz CPU Card (2-way) 332 MHz CPU Card (1-way) 332 MHz CPU Card (2-way)
D01	25F/8	04N4765 21P4751 21P4760 21P4774	1-way processor card (450 MHz) 2-way processor card (450 MHz) 4-way processor card (450 MHz) 6-way processor card (500 MHz)
D01	266H/0	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz)

Failing Function Code	Machine Type/-Model	FRU Part Number	Description and Notes
D01	266H/1	04N5353 09P6524 23L7785 09P6525 23L7794 53P1301 23L7799 53P1334	1-way processor card (600 MHz) 1-way processor card (750 MHz) 2-way processor card (600 MHz) 2-way processor card (750 MHz) 4-way processor card (600 MHz) 4-way processor card (750 MHz) 6-way processor card (688 MHz) 6-way processor card (750 MHz)
D01	266M/1	04N6698 21P6381 21P6383	2-way processor card (500 MHz) 2-way processor card (750 MHz) 4-way processor card (750 MHz)
D01	26B/8	09P0399 09P0143 09P0406 09P4478	Processor card (375 MHz, one-way) Processor card (375 MHz, two-way, 8 M L2) Processor card (375 MHz, two-way, 4 M L2) Processor Card (450 MHz, two-way)
D01	26H/1	11H7517	166 MHz Processor and Cache Card
D01	26H/5	93H9018 93H8945	CPU Card (1-way) CPU Card (2-way)
D01	26H/7	 94H1013 94H1008	Generic L2 Cache problem CPU Card (1-way) CPU Card (2-way)
D01	26H/8	04N4765 21P4751 21P4760 21P4774	1-way 450 MHz processor card 2-way 450 MHz processor card 4-way 450 MHz processor card 6-way 500 MHz processor card
D01	26M/8	04N6930 04N6931	2-way processor card 4-way processor card
D01	286/C4 286/E4	00P2974 00P2977 00P2728 00P2731 00P2733 00P2736	Processor Card, 1.0 GHz 1-way Processor Card, 1.0 GHz 2-way Processor Card, 1.2 GHz 1-way Processor Card, 1.2 GHz 2-way Processor Card, 1.45 GHz 1-way Processor Card, 1.45 GHz 2-way
D01	296/C3 296/E3	00P4958 00P4948	Processor Card, 1.2 GHz 1-way Processor Card, 1.45 GHz 2-way
D01	386/M2	97P3186 00P4050 00P4045	Processor Board (1.2 GHz) Processor Board (1.45 GHz) CUoD Processor Board (1.45 GHz)
D01	396/51	44P1523 44P1524 44P1525	1.3 GHz 4-way MCM Core 0 1.3 GHz 4-way MCM Core 1 1.1 GHz 8-way MCM
D01	396/51	44P1542 44P1544	1.3 GHz 4-way MCM with VPD Card 1.1GHz 8-way MCM with VPD Card
D01	406/71	03N3229 09P3217	1.1 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
D01	406/81	03N3223 03N3228 03N3229 09P3217	1.3 GHz 4-way MCM with VPD Card 1.3 GHz 8-way MCM with VPD Card 1.1 GHz 4-way MCM with VPD Card 1.1 GHz 8-way MCM with VPD Card
D01	43/14	75H5462 75H5463	512KB L2 Cache 1 MB L2 Cache
D01	43/15	07L8446	System Board
D01	43/24	11H7517 93H5163	166 MHz Processor and Cache Card 233 MHz Processor and Cache Card
D01	43/26	08L1013	200 MHz CPU Card
D01	43/27	11K0171 11K0218	CPU card (375 MHz one-way) CPU card (375 MHz two-way)
D01	441/7	09P0277 09P0272 09P0943	Processor card (333 MHz) Processor card (400 MHz) Processor card (450 MHz)
D01	442/7	11K0171 11K0218 09P4478	CPU card (375 MHz one-way) CPU card (375 MHz two-way) CPU card (450 MHz two-way)
D01	46B/5	41L5912	375 MHz System board
D01	17F/3	73H3614 93H2431 03N3989	CPU Card (133 MHz) CPU Card (166 MHz) CPU Card (233 MHz)
D01	9076 SMP Thin/Wide Node	93H9716	CPU card (332 MHz)
D01	9076/ Power3 SMP Thin/Wide Node	03N2403 11K0232	CPU card (200 MHz) CPU card (375 MHz)
D01	9076/ Power3 SMP High Node	11K0198	CPU card
D06		88G3650	64 Port to 128 Port Converter Kit (four to a pack) **Note:** Converter part number is 88G3651
D07	441/7	09P0277 09P0272 09P0943	Processor card (333 MHz) Processor card (400 MHz) Processor card (450 MHz)
D08	7134	88G5722	DC Fan assembly
D46		6339098	Token-Ring 9-pin D-Shell cable, 3m (10 ft.)
D46		60G1063	Token-Ring RJ-45 STP cable, 3m (10 ft.) **Note:** Not used with the High-Speed Token-Ring PCI adapter
D46		93H8894	RJ-45 to 9-pin D-Shell Token-Ring Conversion cable **Note:** Not used with the High-Speed Token-Ring PCI adapter
D46		OEM Cable	Standard UTP RJ-45 cable
D50			Content moved to FFC 190.
D56		12H1204	EIA-232E Printer/ Terminal Serial Cable
D57		07L9822	8-Port Multiport Interface Cable ISA Async Adapter
D59		93H7766	TP PCI Ethernet Adapter

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
D60		93H1902	T2 PCI Ethernet Adapter
D60		93H7766	TP PCI Ethernet Adapter
D66	7250	11H4436	RSS Card (with memory sockets)
D67			8 MB, ECC, 50 nsec Memory Module
D68			16 MB, ECC, 50 nsec Memory Module
D69			32 MB, ECC, 50 nsec Memory Module
D70			64 MB, ECC, 50 nsec Memory Module
D71		42H2771	8 MB, ECC, 60 nsec Memory Module
D72		42H2772	16 MB, ECC, 60 nsec Memory Module
D73		42H2773	32 MB, ECC, 60 nsec Memory Module
D74	25F/4 43/14 43/24	42H2774	64 MB, ECC, 60 nsec Memory Module
D74	43/14	93H6823	128 MB, ECC, 60 nsec Memory Module
D74	43/24	93H6822	128 MB, ECC, 60 nsec Memory Module
D74	43/15	07L9302 07L9304 07L9306	64 MB, ECC Memory Module 128 MB, ECC Memory Module 256 MB, ECC Memory Module
D74	46B/5	19L1809 29L3302	128 MB, ECC Memory Module 256 MB, ECC Memory Module
D75		65G4615	8 MB, ECC, 70 nsec Memory Module
D76			16 MB, ECC, 70 nsec Memory Module
D77			32 MB, ECC, 70 nsec Memory Module
D78		39H9837	64 MB, ECC, 70 nsec Memory Module
D83			8 MB, Parity, 50 nsec Memory Module
D84			16 MB, Parity, 50 nsec Memory Module
D85			32 MB, Parity, 50 nsec Memory Module
D86			64 MB, Parity, 50 nsec Memory Module
D87			8 MB, Parity, 60 nsec Memory Module
D88			16 MB, Parity, 60 nsec Memory Module
D89			32 MB, Parity, 60 nsec Memory Module
D90			64 MB, Parity, 60 nsec Memory Module
D91			8 MB, Parity, 70 nsec Memory Module
D92			16 MB, Parity, 70 nsec Memory Module
D93		65G4617	32 MB, Parity, 70 nsec Memory Module
D94		39H9837	64 MB, ECC, 70 nsec Memory Module
D95	43/14 43/15 25F/4 43/24	94H0029	GXT550P Graphics Adapter
D96		93H6267	GXT255P High Performance PCI Graphics Adapter

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
D97		93H7439	Operator Panel/Speaker Assembly
E10	43/14 43/15	73H4532	Riser Card
E10	43/24	73H3712	Riser Card
E10	46B/5	23L8117	Riser Card
E10	Models not listed		Refer to FFC 227
E11			128 MB, ECC, 50 nsec Memory Module
E12	25F/4 25F/5 26H/1 26H/5 17F/3	93H6821	128 MB, ECC, 60 nsec Memory Module
E12	43/14	93H6823	128 MB, ECC, 60 nsec Memory Module
E12	43/24	93H6822	128 MB, ECC, 60 nsec Memory Module
E12	9076 SMP Thin/Wide Node	93H4702	128 MB, ECC, 60 nsec Memory Module
E12	9076/ Power3 SMP Thin/Wide Node	93H4702	128 MB, ECC, 60 nsec Memory Module
E13			128 MB, ECC, 70 nsec Memory Module
E14			128 MB, Parity, 50 nsec Memory Module
E15			128 MB, Parity, 60 nsec Memory Module
E16			128 MB, Parity, 70 nsec Memory Module
E17	17S/70	19H0288	Memory 16 MB Memory Module
E18	17S/70	35H8751	Memory 64 MB Memory Module
E19	26H/5	07L6594	Power Supply Sensor Failed I/O planar
E19	26H/7	08L0617	I/O planar
E19	286/C4 286/E4	00P5892 09P5859 00P3166 00P4488 00P5830	AC Power Supply DC Power Supply CEC Backplane (GP processor) CEC Backplane (GQ processor) CEC Backplane (RIO-G capability)
E19	296/C3 296/E3	53P5617 00P4958 00P4948 00P4966 00P4970 00P5684	AC Power Supply System Board (1.2 GHz, 1-way) System Board (1.2 GHz, 2-way) System Board (1.45 GHz, 1-way) System Board (1.45 GHz, 2-way)
E19	9076 SMP Thin/Wide Node	41L6138	I/O planar
E19	9076/ Power3 SMP Thin/Wide Node	03N2866 03N3368	I/O planar (200 MHz) I/O planar (375 MHz)
E19	9076/ Power3 SMP High Node	11K0198 03N4184 11K0571	CPU Card System Planar NIO Planar

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
E19	9076/ Power3 RIO Drawer	31L8752 12K0446 05N5005	Supervisor Card Power Supply RIO planar
E1A	17S/80 17S/85	23L7595 04N5011	4 GB Memory Card
E2A		37L6902 19K0561	128 MB Cache, U.S. (includes battery) 128 MB Cache, Japan (includes battery)
E3A		37L6903 00N9561	128 MB Cache battery, U.S. 128 MB Cache battery, Japan
E22			Video Cable (generic)
E23			Audio Cable (generic)
E24	7236	94H0623	Resistor Assembly
E26	26H/5	93H9551	Power Distribution Card
E26	26H/7	08L0388	Power Distribution Card
E29		21H8979	32 MB Cache (Located on the LVD SCSI RAID Adapter) (includes battery)
E30		44H8429	32 MB Cache Battery (Located on the LVD SCSI RAID Adapter)
Exx	9076/ Power3 SMP Thin/Wide Node		(xx represents any character) Refer to the Firmware Checkpoint Three-Digit Error Code section of the service manual.
Fxx	24 25		(xx represents any character) Refer to the Firmware Checkpoint Three-Digit Error Code section of the service manual.
2520		09P2544	Dual-Channel Ultra3 SCSI PCI Adapter
2522		xxxxxx	64-bit PCI-X Dual Channel SCSI Adapter **Note:** Use the location code to identify the failing FRU. Determine if the failing FRU is integrated on the systeh board. If the failing FRU is integrated use FFC 221. If the failing FRU is not integrated replace the FRU identified here.
2530		09P3196	10/100 Mbps Ethernet PCI Adapter II
2550		09P3425	POWER GXT4500P Graphics Adapter
2551		09P3391	POWER GXT6500P Graphics Adapter
2562		09P2470	Keyboard/Mouse PCI Attachment Card
2570		11P1856	IBM Cryptographic Accelerator PCI Adapter
2580	286/C1 286/E1	21P7165	SCSI Accessed Fault-Tolerant Enclosure (SAF-TE) Device
2590		24P3605	48x IDE CDROM Drive Black Bezel
2591		53P2735	IDE 16/48X DVD-ROM Black Bezel
2592		00P4775	Slimline IDE 8X/24X DVD-ROM
25C0		00P3055	IBM Gigabit-SX Ethernet PCI-X Adapter
25C1		00P3056	IBM 10/100/1000 Base-TX PCI-X Adapter

Failing Function Code	Machine Type/- Model	FRU Part Number	Description and Notes
25C2		00P4290	IBM Dual-Port Gigabit SX Ethernet PCI-X Adapter
25C3		00P4289	IBM 10/100/1000 Base-TX Dual-Port PCI-X Adapter
25D0		00P4648	PCI Audio Adapter
2600		00P4296	PCI 64-Bit Fibre Channel Adapter
2D00			SES/SAF-TE LED Problem **Note:** If type/model and FRU information is not listed here, refer to FFC 199.
2D00	286/C4 286/E4	09P5895 00P2983	Cable, DASD 50 pins DASD backplane

Chapter 39. FRU Cross-References

The FRU Cross-references enable the service technician to determine FRU numbers if the part name is known or to determine a FRU description if the FRU number is known.

Using the FRU Name Cross-Reference List

The following procedure is used to find a FRU part number when the FRU name is known. FRU names are listed in alphabetic order.

1. Find your FRU name in the FRU name column.
2. Record the failing function code for the FRU.
3. Go to the “Failing Function Code List” on page 420 to find the FRU part number and description.

FRU Name Cross-Reference List

Description and Notes	Failing Function Code
Adapter, 10/100 MB Base-TX Ethernet PCI	777
Adapter, 2-Port Multiprotocol PCI (ASIC)	444
Adapter, 2-Port Multiprotocol PCI	799
Adapter, 3Com Fast EtherLink XL PCI 10/100 Ethernet for PowerPC Microprocessor-Based Systems	699
Adapter, 4-Port 10/100 Ethernet Tx PCI Adapter	77b
Adapter, 8-Port RS232 ISA Adapter	830
Adapter, 8-Port ISA Async EIA-232/RS-422 Adapter	785
Adapter, 8-Port PCI Asynchronous EIA-232/RS-422 Adapter	686
Adapter, IBM 10/100/1000 Base-TX PCI-X Adapter	25C1
Adapter, IBM 10/100/1000 Base-TX Dual Port PCI-X Adapter	25C2
Adapter, IBM ARTIC960Hx Adapter	675
Adapter, IBM ARTIC960Rx Adapter	674
Adapter, IBM ARTIC960RxD Quad Digital Trunk PCI Adapter, IBM Artic960RxF Digital Trunk Resource	663
Adapter, IBM Dual Port Gigabit SX Ethernet PCI-X Adapter	25C2
Adapter, Auto LANStreamer Token-Ring PCI	750
Adapter, Auto LANStreamer Token-Ring PCI	776
Adapter, PCI High-Speed Token-Ring	646
Adapter, Built-in Parallel Port	827
Adapter, Co-Processor Multiport Adapter, Model 2	781
Adapter, Crytographic 4755	992
Adapter, ESCON Channel PCI Adapter	674
Adapter, Ethernet	962
Adapter, 10/100 Mbps Ethernet PCI Adapter II	2530
Adapter, Gigabit-SX Ethernet PCI-X Adapter	25C0
Adapter, FDDI (vendor logoed)	795
Adapter, GXT110P Graphics Adapter	900

Description and Notes	Failing Function Code
Adapter, GXT120P Graphics Adapter	685
Adapter, GXT130P Graphics Adapter	655
Adapter, GXT135P Graphics Adapter	67E
Adapter, GXT250P PCI Graphics Adapter	786
Adapter, GXT255P High Performance PCI Graphics Adapter	D96
Adapter, GXT300P Graphics Adapter	78D
Adapter, GXT500P Graphics	787
Adapter, GXT550P Graphics	D95
Adapter, GXT800P Graphics (Base Card)	806
Adapter, GXT800P Graphics (Base DIMM)	298
Adapter, GXT800P Graphics (Texture DIMM)	297
Adapter, GXT1000 Graphics Attachment (SPAN)	908
Adapter, GXT2000P Graphics	657
Adapter, GXT3000P 3D PCI Graphics Adapter	778
Adapter, GXT4000P 3D PCI Graphics Adapter	78b
Adapter, GXT4500P 3D PCI Graphics Adapter	2550
Adapter, GXT6000P 3D PCI Graphics Adapter	68E
Adapter, GXT6500P 3D PCI Graphics Adapter	2551
Adapter, Serial HIPPI PCI	938
Adapter, Integrated Ethernet System Planar	887
Adapter, ISDN Basic Rate Interface	693
Adapter, Media Streamer Audio/Video Decoder	966
Adapter, Multibus Integrated Ethernet	790
Adapter, MVP Power Graphics	775
Adapter, PCI Audio	25D0
Adapter, PCI Gigabit Fibre Channel	2600
Adapter, PCI Gigabit Fibre Channel	677
Adapter, PCI 2-Gigabit Fibre Channel	447
Adapter, PCI Differential Ultra SCSI (wide/fast-20) (4-L)	2E6
Adapter, PCI Dual-Channel Ultra3 SCSI (4-Y)	2520
Adapter, PCI Gigabit Ethernet	669
Adapter, PCI Ultra-4 320 MB/sec SCSI	
Adapter, PCI IBM Cryptographic Accelerator	2570
Adapter, Universal PCI Differential Ultra SCSI (4-U)	2E6
Adapter, Dual-Channel PCI-2 to Ultra2 SCSI (4-R)	637
Adapter, Integrated Ultra2 SCSI	84A
Adapter, SCSI-2 Fast/Wide PCI (4-A, 4_A)	746
Adapter, SCSI-2 Differential Fast/Wide PCI (4-B, 4_B)	747
Adapter, PCI 3-Channel Ultra2 SCSI RAID (4-T) (also, see FFC E30 and E29)	667

Description and Notes	Failing Function Code
Adapter, PCI 4-Channel Ultra3 SCSI RAID (4-X) (also, see FFC E3A and E2A)	66D
Adapter, SCSI 32-bit SE Fast/Wide Raid (4-H)	751
Adapter, PCI Single-Ended Ultra SCSI (wide/fast-20) (4-K)	840
Adapter, T2 PCI Ethernet	D60 742
Adapter, SP Switch MX	763
Adapter, TB3-PCI Adapter	764
Adapter, TP PCI Ethernet	D59
Adapter, TURBOWAYS 25 ATM PCI	691
Adapter, 64-bit/66 MHz PCI ATM MMF	69b
Adapter, 64-bit/66 MHz PCI ATM 155 UTP	69d
Adapter, TURBOWAYS 155 PCI MMF ATM (1MB)	697
Adapter, TURBOWAYS 155 PCI UTP ATM (1MB)	698
Adapter, Ultimedia Video Capture Adapter	788
Adapter, Unknown (vendor supplied)	711
Adapter, X.25 Interface Co-Processor	780
Adapter, XGA graphics	983
Battery, Time-of-Day and NVRAM	151
Battery, Cache (also, see FFC 667)	E30
Battery, Cache (also, see FFC 66D)	E3A
Cable, 2-Port Multiprotocol V.24, V.35, V.36, and X.21	2C3
Cable, 4-Port Multiprotocol jumper	267
Cable, Async EIA - 232D, V.24	259
Cable, IBM ARTIC960 Adapter	C98
Cable, Audio (generic)	E23
Cable, Diskette Drive Signal	181
Cable, EIA-232E Printer/Terminal Serial	D56
Cable, Fiber optic for FC-AL adapter	C24
Cable, Multiport Interface Cable for 8-port Async ISA Adapter	D57
Cable, Multiprotocol - EIA-422A	253
Cable, Parallel Printer	251
Cable, Power, Serial Attachment, Dials/6094	929
Cable, SCSI Controller	276
Cable, SCSI Internal (by machine type)	277
Cable, SCSI Generic (External)	277
Cable, SCSI Internal Disk Drive	190
Cable, Signal, Serial Attachment, Dials6094	270
Cable, Terminal Cable, EIA-422A	263
SCSI Device/SCSI Cable/SCSI Terminator	190
Cable, Token Ring	256

Description and Notes	Failing Function Code
Cable, Type 3 Media Filter Token Ring .254m (10inch) or Auto Token-Ring LANstreamer MC 32 Standard Token Ring	D46
Cable, Video (generic)	E22
CD-ROM drive, 20x (MAX) SCSI-2 Drive	682
CD-ROM drive, 32x (MAX) SCSI-2 Drive	664
CD-ROM drive, 48x (MAX) IDE Drive	2590
CD-ROM drive, 600 MB Double Speed Tray-Loading, Type C Bezel	89c
CD-ROM drive, 8x Speed SCSI-2 Drive	804
CD-ROM drive, External 2.6 GB Rewritable Optical Disk	789
CD-ROM drive, Quad Speed SCSI-2 640 MB Drive	734
CD-ROM drive, Type A or B Bezel	974
CD-ROM-2 drive, Type B Bezel (Unload button has a white underside)	987
Controller, 128-Port Aysnc Controller	709
Controller, 128-Port PCI Asynchronous	687
Controller, SCSI I/O	B88
CPU card	210
Disk Drive Assembly, 200 MB SCSI, 3.5 inch	989
Disk Drive Assembly, 320 MB SCSI	953
Disk Drive Assembly, 320 MB SCSI, logic card and frame	953
Disk Drive Assembly, 355 MB SCSI	952
Disk Drive Assembly, 355 MB SCSI, logic card and frame	952
Disk Drive Assembly, 400 MB SCSI	954
Disk Drive Assembly, 400 MB SCSI, logic card and frame	954
Disk Drive Assembly, 540 MB SCSI-2 (1-inch height)	981
Disk Drive Assembly, 857 MB SCSI, logic card and frame	955
Disk Drive Assembly, 1.0 GB SCSI (1-inch height)	984
Disk Drive Assembly, 1 GB SCSI, Single-Ended	968
Disk Drive Assembly, 1.08 GB SCSI-2 (1-inch height)	741
Disk Drive Assembly, 1.1 GB 8-bit Single-Ended	700
Disk Drive Assembly, 1.1 GB 16-bit Single-Ended	701
Disk Drive Assembly, 1.1 GB 16-bit Differential	702
Disk Drive Assembly, 1.37 GB SCSI	960
Disk Drive Assembly, 1.37 GB SCSI, Logic Card	960
Disk Drive Assembly, 2.0 GB SCSI-2, Differential	912
Disk Drive Assembly, 2.0 GB SCSI-2, Differential Fast/Wide	917
Disk Drive Assembly, 2.0 GB SCSI-2, Single-Ended Fast/Wide	918
Disk Drive Assembly, 2.0 GB SCSI-2, Single-Ended	990
Disk Drive Assembly, 2.1 GB 16 bit SCSI	784
Disk Drive Assembly, 2.2 GB 8-bit Single-Ended	703
Disk Drive Assembly, 2.2 GB 16-bit Single-Ended	704

Description and Notes	Failing Function Code
Disk Drive Assembly, 2.2 GB 16-bit Differential	705
Disk Drive Assembly, 2.2 GB 16-bit Single-Ended	791
Disk Drive Assembly, 2.4 GB SCSI	986
Disk Drive Assembly, 4.5 GB 16-bit Single-Ended	706
Disk Drive Assembly, 4.5 GB 16-bit Differential	707
Disk Drive Assembly, 4.5 GB 16-bit Single-Ended	772
Disk Drive Assembly, 4.5 GB 16-bit Single-Ended	792
Disk Drive Assembly, 4.5 GB Ultra SCSI Single-Ended	638
Disk Drive Assembly, 4.5 GB Ultra SCSI Single-Ended	689
Disk Drive Assembly, 4.5 GB SCSD Single-Ended	679
Disk Drive Assembly, 4.7 GB DVD-RAM drive	66E
Disk Drive Assembly, 9.1 GB Ultra SCSI Single-Ended	690
Disk Drive Assembly, 9.1 GB 16-bit Single-Ended	773
Disk Drive Assembly, 9.1 GB 16-bit Single-Ended	793
Disk Drive Assembly, 9.1 GB 68-pin LVD SCSI	63A 64A 601
Disk Drive Assembly, 9.1 GB 80-pin LVD SCSI	63B 64B 621
Disk Drive Assembly, 9.1 GB Ultra-SCSI 16-bit	681
Disk Drive Assembly, 9.1 GB Ultra SCSI (68-pin)	440
Disk Drive Assembly, 9.1 GB 10K RPM Ultra SCSI (68-pin)	639
Disk Drive Assembly, 9.1 GB 10K RPM Ultra SCSI (80-pin)	640
Disk Drive Assembly, 18.2 GB 68-pin LVD SCSI	63C 64C 623
Disk Drive Assembly, 18.2 GB 80-pin LVD SCSI	63D 64D 624
Disk Drive Assembly, 18.2 GB Ultra-SCSI 16-bit	653
Disk Drive Assembly, 18.2 GB Ultra SCSI (68-pin)	441
Disk Drive Assembly, 36.4 GB 68-pin LVD SCSI	63E 64E
Disk Drive Assembly, 36.4 GB 80-pin LVD SCSI	63F 64F
Disk Drive Assembly, 9.1 GB Differential	774
Disk Drive Assemblies, SSA type	6CC
Diskette Drive, 3.5-inch	935
Display Unit,	725
DVD-ROM, 16/48X IDE Drive	2591
DVD-ROM, Slimline IDE Drive	2592

Description and Notes	Failing Function Code
Fan Assemblies	166 167
File Server	993
Fuse, SCSI I/O Controller	279
Interface board, IBM ARTIC960 Adapter	C95
Interposer, RS232 Printer/Terminal	261
Keyboard, 5085/5086	931
Keyboard, Kanji	923
Keyboard, PS/2	736
Keyboard U.S.	921
Keyboard, WT	922
Lighted Program Function Keyboard (6094, model 20)	930
Logic Card, 355/670 MB	956
Memory Modules	2C6
Memory Base Cards (Risers)	2C7
Memory Module, IBM ARTIC960	C94
Memory Module, 1 GB	2CC
Memory Module, 256 MB	2CD
Memory Module, 512 MB	2CE
Memory, 32 MB Cache (includes battery FFC E30) (also, see FFC 667)	E29
Memory, 128 MB Cache (includes battery FFC E3A) (also, see FFC 66D)	E2A
Module, ROM	217
Mouse, 3-Button	925
Network Interface, Switching	980
Power Supplies	152
Power Supply, Portable Disk Drive	192
RAN, 16-Port EIA-232	837
RAN, 16-Port RS-422	684
Resistor Assembly for 7236	E24
Riser Card, Operator Panel, SCSI	812
SSA disk drives	6CC
Stylus, Tablet	188
System Board	221
System Board, Integrated Ultra2 SCSI	662
Tablet Cursor	159
Tablet, 5083/21 or 6093/11	926
Tablet, 5083/22 or 6093/12, 21, 22	927
Tape, Atape	899
Tape Drive, 150 MB 1/4 inch	971
Tape Drive, 525 MB 1/4 inch	991

Description and Notes	Failing Function Code
Tape Drive, 1.2 GB 1/4 inch	995
Tape Drive, 2.0 GB 4 mm	998
Tape Drive, 2.3 GB 8 mm	972
Tape Drive, 4 GB 4 mm	915
Tape Drive, 5 GB 8 mm Single-Ended	994
Tape Drive, 5 GB 8 mm Differential	914
Tape Drive, 12 GB 4 mm SCSI	678
Tape Drive, 13 GB 1/4-inch	757
Tape Drive, 16 GB 4 mm Tape Autoloader	745
Tape Drive, 20 GB 8 mm SCSI	964
Tape Drive, 24/48 GB 4 mm DDS-2 Tape Autoloader	783
Tape Drive, 35 GB DLT7000	692
Tape Drive, 40 GB DLT8000	451
Tape Drive, 48 GB 4 mm Tape Autoloader	745
Tape Drive, 60 GB	452
Tape Drive, 140 GB 8 mm	733
Tape Drive, 400 GB 8 mm SCSI Autoloader	964
Tape Drive, 9348 1/2-Inch 9-Track	970
Tape Library, 7331 Model 205	749
Terminator, SCSI card edge	232
Terminator, SCSI pass-through and cable assembly	277
Terminator, SCSI Controller (external)	233
Transceiver, Ethernet, Twisted Pair	B08
Transceiver, Ethernet, ISO 8802/3 (formerly IEEE 802.3)	B09
Wrap plug, IBM ARTIC960 Adapter Interface Board	C97
3514 External Disk Array, Models 212, and 213	999
3852 Graphics Visualization Server	982
2105 Model B09	683

Appendix A. Wrap Plugs

Adapter Name	Connector Type, Port Name, or Cable	Part Number
2-Port Multiprotocol PCI Adapter	Wrap Plug	93H3662
8-Port EIA-232/RS-422A Asynchronous ISA Adapter	25-position D-Shell	6298964
16-Port EIA-232 Remote Async Node	RJ-45 0.2m (9 inch) Controller Cable 4.6m (15 feet) Controller Cable RJ-45 to DB-25 Converter Cable Cable Kit (provides four RJ-45 to DB-25 Cable) Terminator	43G0928 43G0936 43G0937 51G8610 43G0938 43G0926
Auto LANstreamer Token-Ring PCI Adapter	Token-Ring Port	6165899
Built-in Serial Adapter	Serial Ports S1 & S2 9-pin to 25-pin Converter Cable 25-pin D-Shell	6298965 6450242 6298964
Built-in Parallel Printer Adapter	Parallel Printer Port	71F0690
Co-Processor Multiport Adapter, Model 2	78-Position X.21 V.35 EIA-232D EIA-422A	40F9902 40F9904 40F9900 40F9903 53F3886
ESCON Adapter	ESCON Wrap Plug	5605670
10/100 Mbps Ethernet PCI Adapter II 10/100 Ethernet Tx PCI Adapter 4-Port 10/100 Base-TX Ethernet PCI Adapter	Twisted-Pair Wrap Plug	00G2380
IBM 10/100/1000 Base-TX PCI-X Adapter	Twisted-Pair Wrap Plug	00G2380 00P4289
IBM 10/100/1000 Base-TX Dual Port PCI-X Adapter	Twisted-Pair Wrap Plug	00G2380
Ethernet T2 PCI Adapter	Transceiver Wrap Plugs: Thin Twisted Pair	 02G7433 00G2380
Ethernet T5 PCI Adapter	Transceiver Wrap Plugs: Thin Twisted Pair 15-Position D-Shell BNC, 25-ohm Terminator	 02G7433 00G2380 70F9625 70F9626
Ethernet PCI Adapter	Adapter Wrap Plugs: Twisted Pair DIX 15-pin Connectors (2) BNC Wrap Plugs (3)	 00G2380 71F1167 70F9625 71F1168 70F9626 02G7433
Gigabit Ethernet Adapter	Twisted Pair Wrap Plug	00P1689
2-Gigabit SX Ethernet PCI-X Adapter	LC Multimode/Single Mode Wrap Plug	11P3847
2-Gigabit Fibre Channel PCI Adapter	Fibre Connector Wrap Plug	05N6768

Adapter Name	Connector Type, Port Name, or Cable	Part Number
64-bit/66 MHz PCI ATM MMF Adapter Gigabit Ethernet-SX PCI Adapter Serial HIPPI PCI Adapter TURBOWAYS 155 PCI MMF ATM PCI Adapter	Fiber Connector Wrap Plug	21H3547
Gigabit Fibre Channel PCI Adapter	Fiber Connector Wrap Plug	16G5609
64-bit/66 MHz PCI ATM 155 UTP Adapter TURBOWAYS 25 ATM PCI Adapter TURBOWAYS 155 PCI UTP ATM PCI Adapter	Wrap Plug	21P8009 42H0540
X.25 Interface Co-Processor Adapter	X.25 Adapter Wrap Plug X.21 Cable Wrap Plug V.24 Cable Wrap Plug V.35 Cable Wrap Plug	07F3132 07F3153 07F3163 07F3173

Appendix B. Test Media

Device	Media or Supplies	Part Number
4 GB 4 mm tape drive	Tape/media kit Kit includes: - 4 mm Cleaning Tape Cartridge - 4 mm 2GB Data Tape Cartridge - 4 mm 4GB Data Tape Cartridge 4 mm Diagnostic Cartridge	8191149 21F8763 21F8758 8191160 8191146
5 GB 8 mm Tape Drive	Tape/Media kit Kit includes: - 8 mm Cleaning Tape Cartridge - 8 mm Blank Data Tape Cartridge - 8 mm Test Tape Cartridge Package of five 8 mm Blank Tapes	59F3907 21F8593 21F8595 21F8577 21F8595
1/4-inch Cartridge Tape Drive	1/4 inch Head Cleaning Kit 150 MB Data Tape Cartridge (5-pack) 525 MB Data Tape Cartridge (5-pack) 1.2 GB Data Tape Cartridge (5-pack) 1.2 GB 1/4 inch Test Tape Cartridge	21F8570 21F8588 21F8587 21F8732 21F8734
3-1/2 inch Diskette Drive	3-1/2 inch 1.0 MB Blank Diskette 3-1/2 inch 1.0 MB Diagnostic Test Diskette 3-1/2 inch 2.0 MB Blank Diskette 3-1/2 inch 2.0 MB Diagnostic Test Diskette	6404095 71F1247 6404078 71F1248
CD-ROM Drive, Bezel type C	Test Disc	81F8902
Diagnostic Package	Diagnostic and Tests on CD-ROM	40H3401 40H3394

Supplemental Diagnostic Diskette Description	Part Number
10/100 Ethernet Tx PCI Adapter	93H1843
Eicon ISDN DIV A Pro 2.0 PCI S/T Adapter (Order through the kit FRU Part Number)	41L5794
IBM ARTIC960Hx 4-port Selectable PCI Adapter IBM ARTIC960Hx 4-port T1/E1 Adapter IBM ARTIC960Hx 4-port DSP Resource Adapter	07L9046
SSA Multi-Initiator/RAID EL Adapter	96H9868

Appendix C. System Memory Reference

System Unit Memory Combinations

Type and Model	System Memory Configuration Type/Size (Min./Max.)	Base Memory Card FRU Number	Memory Module Size (Bytes)	Memory Module FRU Number	Card Pairs
13S/70 15S/70 17S/70	(512 MB/16 GB)	93H767 (RH) 93H7689 (LH)	16 MB 32 MB 64 MB	19H0288 19H0289 35H8751	Yes
13S/7A 15S/7A 17S/7A	(512 MB/32 GB) R1 Memory Cards	90H9831 90H9834 97H6204 90H9837 97H6213 97H6226 97H6244	128 MB 256 MB 256 MB (64 MB) 512 MB 512 MB (64 MB) 1024 MB 2048 MB	N/A	Quads
13S/80 15S/80 17S/80 17S/85	(1G B/64 GB)	23L7566 23L7570 23L7577 23L7589 23L7595	256 MB 512 MB 1024 MB 2048 MB 4096 MB	N/A	Quads
24E/2 24E/3	(16 MB/1 GB) System Board	N/A	8 MB 16 MB 32 MB 64 MB 128 MB	65G4615 19H0288 65G4617 39H9837 73H3451	No
25F/3	(16 MB/1 GB) System Board	N/A	8 MB 16 MB 32 MB 64 MB 128 MB	65G4615 19H0288 65G4617 39H9837 73H3451	No
25F/4	(16 MB/1 GB) System Board	N/A	8 MB 16 MB 32 MB 64 MB 128 MB	42H2771 42H2772 42H2773 42H2774 93H6821	No
25F/5	(64 MB/1 GB)	93H2641	32 MB 128 MB	93H4700 93H4702	Yes
256F/0 256F/1 25F/8	(256 MB/16 GB)	04N4808	32 MB 128 MB 256 MB 512 MB 1 GB	07L7729 93H4702 07L9030 10L5417 09P0335	Quads
26B/8	System board (256 MB/16 GB)	07L7065	128 MB 256 MB 512 MB	93H470 09P0550 09P0491	Yes*
26H/1	(16 MB/1 GB)	N/A	16 MB 32 MB 64M 128M	42H4772 42H2773 42H2774 93H6821	No

Type and Model	System Memory Configuration Type/Size (Min./Max.)	Base Memory Card FRU Number	Memory Module Size (Bytes)	Memory Module FRU Number	Card Pairs
26H/5	(64 MB/1 GB)	93H2641	32 MB 128 MB	93H4700 93H4702	Yes
26H/7	(64 MB/8 GB)	93H2641	32 MB 128 MB 256 MB	93H4700 93H4702 07L9030	Yes
266H/0 266H/1	(256 MB/16 GB)	04N4808	32 MB 128 MB 256 MB 512 MB 1 GB	07L7729 93H4702 07L9030 10L5417 09P0335	Quads
266M/1	(1 GB/32 GB)	04N3033	128 MB 256 MB 512 MB 1 GB	93H4702 07L9030 10L5417 09P0335	Group of 8
26H/8	(256 MB/16 GB)	04N4808	32 MB 128 MB 256 MB 512 MB 1 GB	07L7729 93H4702 07L9030 10L5417 09P0335	Quads
26M/8	(1 GB/32 GB)	04N3033	128 MB 256 MB 512 MB	93H4702 07L9030 10L5417	Group of 8
286/C1 286/E1	(512 MB/ 8 GB with all processors)	N/A	512 MB	09P0491	Yes
286/C4 286/E4	(I GB/16GB)	N/A	256 MB 512 MB 1 GB 2 GB	09P2705 09P2706 09P2707 53P3232	Quads
296/C3 296/E3	(1024 MB/8 GB) System Board	N/A	00P5765 00P5767 00P5769 00P5771 00P5773	256 MB 1024 MB 512 MB 1 GB 2 GB	Quads
386/M2	(1 GB/64 GB)	On Processor Card 09P6257	512 MB 1 GB 4 GB	53P3226 53P3230 53P3232	Quads
396/51	(4 GB/32 GB)	09P6215 00P5834 09P2881	4 GB 8 GB 8 GB	NA N/A N/A	No No No
406/71	(4 GB/128 GB)	Inner 53P1013 Inner 53P0374 Inner 53P4252 Inner 53P4259 Inner 53P4266	4 GB 8 GB 16 GB 32 GB 64 GB	N/A	No

Type and Model	System Memory Configuration Type/Size (Min./Max.)	Base Memory Card FRU Number	Memory Module Size (Bytes)	Memory Module FRU Number	Card Pairs
406/81	(8 GB/256 GB)	Inner 53P4242 Outer 53P4273 Inner 53P4247 Outer 53P4278 Inner 53P4252 Outer 53P4283 Inner 53P4259 Outer 53P4290 Inner 53P4266 Outer 53P4297	4 GB 4 GB 8 GB 8 GB 16 GB 16 GB 32 GB 32 GB 64 GB 64 GB	N/A	No
43/14	(32 MB/768 MB) System Board	N/A	16 MB 32 MB 64 MB 128 MB	42H2772 42H2773 42H2774 93H6823	No
43/15	(128 MB/1 GB) System board	N/A	64 MB 128 MB 256 MB	19L1808 19L1809 29L3302	No
43/24	(32 MB/1 GB) System Board	N/A	8 MB 16 MB 32 MB 64 MB 128 MB	42H2771 42H2772 42H2773 42H2774 93H6822	No
43/26	(256 MB/4 GB)	07L7065	32 MB 128 MB	07L7729 93H4702	Yes
43/27	(256 MB/8 GB)	07L7065	128 MB 256 MB	93H4702 07L9030	Yes
441/7	(256 MB/2 GB) System Board	N/A	128 MB 256 MB 256 MB 512 MB 512 MB	93H4702 07L9030 09P0550 07L9758 09P0491	Yes
442/7	(256 MB/8 GB)	07L7065	128 MB 256 MB	93H4702 07L9030	Yes
46B/5	(128 MB/1 GB)	N/A	64 MB 128 MB 256 MB	19L1808 19L1809 29L3302	Yes
17F/3	(16 MB/1 GB) System Board	N/A	8 MB 16 MB 32 MB 64 MB 128 MB	65G4615 19H0288 65G4617 39H9837 73H3451	No
9076 SMP Thin/Wide Node	(256 MB/3 GB)	93H2641	128 MB	93H4702	Yes
9076/ Power3 SMP Thin/Wide Node	(256 MB/8 GB)	07L7065	128 MB 256 MB	93H4702 07L9030	Yes
9076/ Power3 SMP High Node	(1 GB/16 GB)	07L6608	128 MB	93H4702	Group of 8
9112/265	(512 MB/ 8 GB with other processors)	N/A	512 MB	09P0491	Yes
Note: * = Can be replaced individually with exact same part number, otherwise replace in pairs.					

Appendix D. General Attributes Required When Using a TTY Terminal

The following general attributes are the default settings for the diagnostic programs. Be sure your terminal is set to these attributes.

Note: These attributes should be set before the diagnostic programs are loaded.

Refer to the following table.

General Setup Attributes	3151 /11 /31 /41 Settings	3151 /51 /61 Settings	3161 /3164 Settings	Description
Machine mode	IBM 3151	IBM 3151 PC	IBM 3161 or IBM 3164	The diagnostic programs are set to emulate use of the 3161 ASCII Display Terminal. If your terminal can emulate a 5085, 3161 or 3164 terminal, use the following attribute settings. Otherwise, refer to your operator's manual, compare the follow attribute descriptions with those of your terminal, and set your attributes accordingly.
Generated Code Set		ASCII		
Screen	Normal	Normal		Uses the EIA-232 interface protocol.
Row and Column	24 x 80	24 x 80		Uses the EIA-232 interface protocol.
Scroll	Jump	Jump	Jump	When the last character on the bottom line is entered, the screen moves down one line.
Auto LF	Off	Off	Off	For the ″On″ setting, pressing the Return key moves the cursor to the first character position of the next line. For the ″Off″ setting, pressing the Return key moves the cursor to the first character position of the current line. The CR and LF characters are generated by the New line setting.
CRT saver	Off	Off	10	The ″10″ setting causes the display screen to go blank if there is no activity for 10 minutes. When the system unit sends data or a key is pressed, the screen contents are displayed again.
Line wrap	On	On	On	The cursor moves to the first character position of the next line in the page after it reaches the last character position of the current line in the page.
Forcing insert	Off	Off		
Tab	Field	Field	Field	The column tab stops are ignored, and the tab operation depends on the field attribute character positions.

General Setup Attributes	3151 /11 /31 /41 Settings	3151 /51 /61 Settings	3161 /3164 Settings	Description
Trace			All	Both inbound data (data to the system unit) and outbound data (data from the system unit) to and from the main port can be transferred to the auxiliary port without disturbing communications with the system unit when the Trace key is pressed.

Additional Communication Attributes

The following communication attributes are for the 3151, 3161, and 3164 terminals.

Communication Setup Attributes	3151/11 /31/41) Settings	3151 /51/61, Settings	3161 /3164 Settings	Description
Operating mode	Echo	Echo	Echo	Data entered from the keyboard on the terminal is sent to the system unit for translation and then sent back to the display screen. Sometimes called conversational mode.
Line speed	9600 bps	9600 bps	9600 bps	Uses the 9600 bps (bits per second) line speed to communicate with the system unit.
Word length (bits)	8	8	8	Selects eight bits as a data word length (byte).
Parity	No	No	No	Does not add a parity bit, and is used together with the word length attribute to form the 8-bit data word (byte).
Stop bit	1	1	1	Places a bit after a data word (byte).
Turnaround character	CR	CR	CR	Selects the carriage return (CR) character as the line turnaround character.
Interface	EIA-232	EIA-232	EIA-232	Uses the EIA-232 interface protocol.
Line control	IPRTS	IPRTS	IPRTS	Uses the 'permanent request to send' (IPRTS) signal to communicate with system unit.
Break signal (ms)	500	500	500	The terminal sends a 'break signal' to the system unit within 500 ms after the Break key is pressed.
Send null suppress	On	On		Trailing null characters are not sent to the system unit.
Send null			On	Trailing null characters are sent to the system unit.
Response delay (ms)	100	100	100	The terminal waits for 100 ms for the system unit to respond.

Additional Keyboard Attributes

The following keyboard attributes are for the keyboard attached to the 3151, 3161, and 3164 terminals.

Keyboard Setup Attributes	3151/11 /31/41 Settings	3151 /51/61 Settings	3161 /3164 Settings	Description
Enter	Return	Return	Return	The Enter key functions as the Return key.
Return	New line	New line	New line	The cursor moves to the next line when the Return key is pressed.
New line	CR	CR	CR	The Return key generates the carriage return (CR) and the line feed (LF) characters. The line turnaround occurs after the CR and LF characters are generated.
Send	Page	Page	Page	The contents of the current page are sent to the system unit when the Send key is pressed.
Insert character	Space	Space	Space	A blank character is inserted when the Insert key is pressed.

Additional Printer Attributes

The following printer attributes are for a printer attached to the 3151, 3161, and 3164 terminals.

Printer Setup Attributes	3151/11 /31/41 Settings	3151 /51/61 Settings	3161 /3164 Settings	Description
Line speed	9600	9600	9600	Uses 19200 or 9600 bps (bits per second) line speed to communicate with the system unit.
Word length (bits)	8	8	8	Selects eight bits as a data word length (byte).
Parity	Even	Even	No	
Stop bit	1	1	1	Places a bit after a data word (byte).
Characters	ALL	ALL		
Line end			CR-LF	
Print			View- port	
Print EOL			Off	
Print null			Off	

Appendix E. CHRP Error Log Structure

CHRP Error Logs in AIX

On Common Hardware Reference Platform Architecture (CHRP) systems, detailed AIX error log entries are created for machine checks, check stops, environmental failures, boot failures, and Service Processor failures. This log data is provided by product-specific firmware known as Run-Time Abstraction Services (RTAS). The detail data in the logs are in a format common to all CHRP systems.

Note: These logs are analyzed automatically by AIX diagnostics and should not require manual analysis, however, a situation may arise making it useful to examine the detail manually, possibly supplying you with more information.

See Figure 1 for the general structure of the error log data.

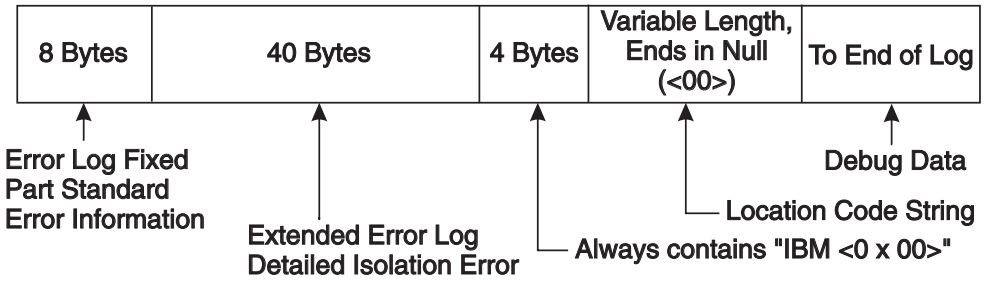


Figure 1. Standard IBM CHRP error log format

As shown in Figure 1:

- The Error Log Fixed Part is always present, and provides error information about the type of error, its severity, and how it was handled. The Error Log Fixed Part also indicates the presence and length of the extended error log information.
- The Extended Error Log portion provides more specific information about the cause, type, and location of the error.
- The next 4 bytes, containing the ASCII characters IBM and a null character, indicate that IBM-specific extensions to the standard CHRP log architecture follow.
- A variable length string follows, containing the physical locations of any Field Replaceable Units (FRUs) implicated by the failure.

  Location codes are separated by blanks (0x20), and the string ends in a null character (0x00). Refer to “Location Codes for CHRP Model Architecture System Units” on page 207 for more information on CHRP Location Codes.

- Other data may follow after the location codes, but it is unarchitected engineering debug information that varies from system to system.

More detailed information on each portion of the log format is available in later sections of this chapter. Refer also to “Location Codes for CHRP Model Architecture System Units” on page 207 for more information on CHRP Location Codes.

Figure 2 illustrates how the Detail Data is decoded.

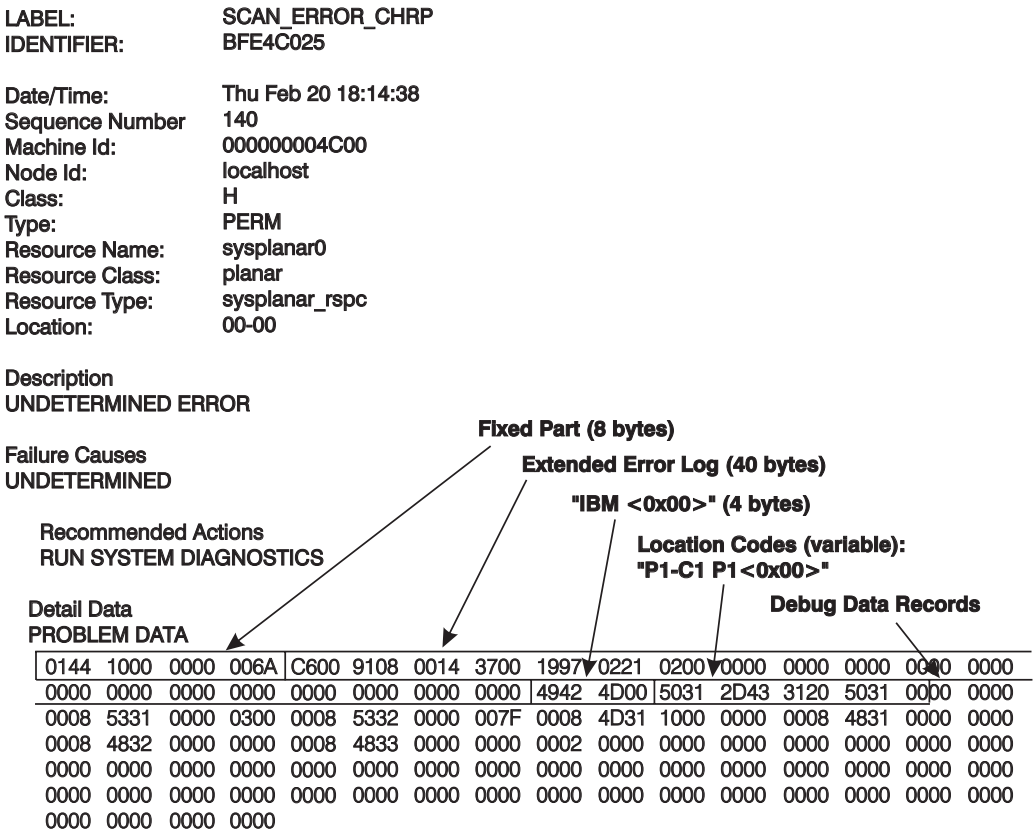


Figure 2. Example AIX error log with CHRP Detail Data

Versions of the Error Log Format

There are several versions of the error log formats. Use byte 0 to determine which error log format table to use.

RTAS Error Return Format Fixed Part (All Versions)

The summary portion of the error return is designed to fit into a single 32-bit integer. When used as a data return format in memory, an optional Length field and Extended Error Log data may follow the summary. The fixed part contains a Presence flag which identifies whether an extended report is present.

Note: In Table 2, the location of each field within the integer is included in parentheses after its name. Numerical field values are indicated in decimal unless noted otherwise.

Table 2. RTAS Error Return Format (Fixed Part, All Versions)

Bit Field Name (bit numbers)	Description, Values
Version (0:7)	A distinct value used to identify the architectural version of message. Current version = (1)
Severity (8:10)	Severity level of error/event being reported: • FATAL (5) • ERROR (4) • ERROR_SYNC (3) • WARNING (2) • EVENT (1) • NO_ERROR (0) • reserved for future use (6-7)
RTAS Disposition (11:12)	Degree of recovery which RTAS has performed prior to return after an error (value is FULLY_RECOVERED if no error is being reported): • FULLY_RECOVERED(0) **Note:** Cannot be used when Severity is FATAL. • LIMITED_RECOVERY(1) • NOT_RECOVERED(2) • reserved for future use (3)
Optional_Part_Presence (13)	Indicates if an Extended Error Log follows this 32-bit quantity in memory: • PRESENT (1): The optional Extended Error Log is present. • NOT_PRESENT (0): The optional Extended Error Log is not present.
Reserved (14:15)	Reserved for future use (0:3)
Initiator (16:19)	Abstract entity that initiated the event or the failed operation: • UNKNOWN (0): Unknown or Not Applicable • CPU (1): A CPU failure (in an MP system, the specific CPU is not differentiated here) • PCI (2): PCI host bridge or PCI device • ISA (3): ISA bus bridge or ISA device • MEMORY (4): Memory subsystem, including any caches • POWER_MANAGEMENT (5): Power Management subsystem • Reserved for future use (6-15)
Target (20:23)	Abstract entity that was apparent target of failed operation (UNKNOWN if Not Applicable): Same values as Initiator field

Table 2. RTAS Error Return Format (Fixed Part, All Versions) (continued)

Bit Field Name (bit numbers)	Description, Values
Type (24:31)	General event or error type being reported: Internal Errors: • RETRY (1): too many tries failed, and a retry count expired • TCE_ERR (2): range or access type error in an access through a TCE • INTERN_DEV_FAIL (3): some RTAS-abstracted device has failed (for example, TODC) • TIMEOUT (4): intended target did not respond before a time-out occurred • DATA_PARITY (5): Parity error on data • ADDR_PARITY(6): Parity error on address • CACHE_PARITY (7): Parity error on external cache • ADDR_INVALID(8): access to reserved or undefined address, or access of an unacceptable type for an address • ECC_UNCORR (9): uncorrectable ECC error • ECC_CORR (10): corrected ECC error • RESERVED (11-63): Reserved for future use Environmental and Power Warnings: • EPOW(64): See Extended Error Log for sensor value • RESERVED (65-95): Reserved for future use Power Management Events(96-159): power management event occurred - see base CHRP document for details. Reserved for future use (160-223) Vendor-specific events(224-255): Non-architected Other (0): none of the above
Extended Error Log Length (32:63)	Length in bytes of Extended Error Log information see “Extended Error Log Formats” on page 527

Extended Error Log Formats

The following tables define an extended error log format by which the RTAS can optionally return detailed information to the software about a hardware error condition. For CHRP products, this extended data is usually provided.

Figure 3 and Table 3 on page 528 shows the general layout for the extended error log format, while Table 4 on page 530 through Table 10 on page 533 show the detailed layout of bytes 12 through 39. The detail area format is determined by bits 4:7 of byte 2, which indicate the error log type.

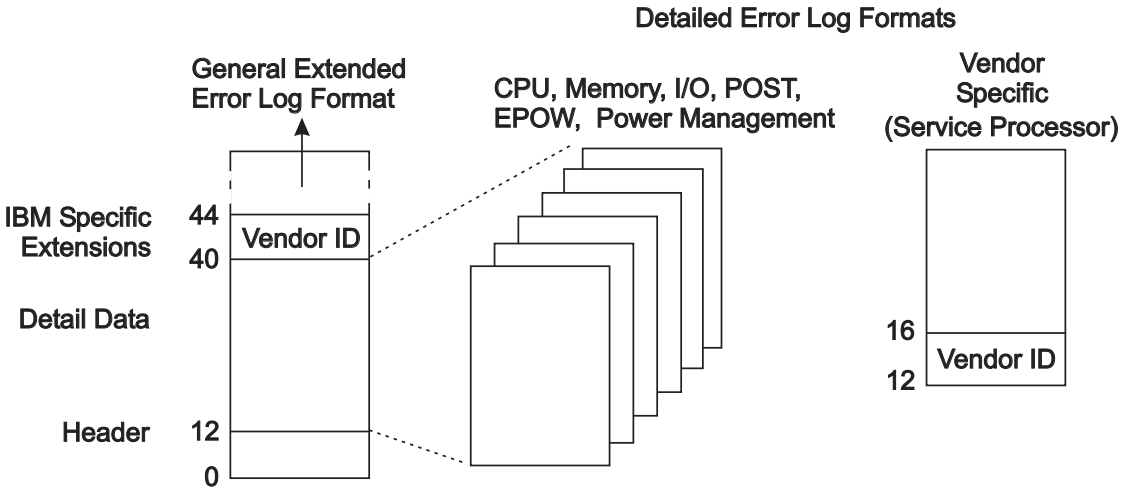


Figure 3. Layout of extended error log format from RTAS

Product-unique data (location codes and debug information) is added to the end of the extended error log buffer (starting at byte 40) for capture and logging.

Note: The following log formats are designed to support the representation of integer values in either the Big-Endian (AIX, Apple) or Little-Endian (Intel) formats. For AIX, this is always Big-Endian format, which means there is no byte swapping, and bits run from 0 (high-order, leftmost) to 7 (low-order, rightmost).

RTAS General Extended Error Log Format, Versions 1, 2

Table 3. RTAS General Extended Error Log Format, Versions 1, 2

Byte	Bit(s)	Description
0	0	1 = Log Valid
	1	1 = Unrecoverable Error
	2	1 = Recoverable (correctable or successfully retried) Error
	3	1 = Unrecoverable Error, Bypassed - Degraded operation (for example, Single CPU taken off-line, bad cache bypassed)
	4	1 = Predictive Error - Error is recoverable, but indicates a trend toward unrecoverable failure (for example, correctable ECC error threshold)
	5	1 = New Log (always 1 for data returned from RTAS)
	6	1 = Addresses/Numbers are Big-Endian format, 0 = Little-Endian **Note:** This bit is always set to the Endian mode in which RTAS was initialized.
	7	Reserved
1	0:7	Reserved
2	0	Set to 1 - (Indicates log is in PowerPC format)
	1:2	Reserved
	3	1 = No failing address was available for recording within the log's Detailed Log Data, so the address field is invalid
	4:7	Log format indicator, defines format used for bytes 12-39: • (0) Reserved • (1) CPU-detected failure, see Table 4 on page 530 • (2) Memory-detected failure, see Table 5 on page 530 • (3) I/O-detected failure, see Table 6 on page 531 or Table 12 on page 536 (V2) • (4) Power-On Self Test (POST) failure, see Table 7 on page 532 • (5) Environmental and Power Warning, see Table 8 on page 532 or Table 13 on page 538 (V2) • (6) Power Management Event (see base CHRP document for description) • (7-11) Reserved • (12-15) Reserved for Vendor-specific • (13) IBM Service Processor errors, see Table 10 on page 533
3	0:3	Reserved
	4	1 = Error is residual information from a failure which occurred prior to the last boot (for example, stored information about a machine check that crashed the system before RTAS could report it to the OS)
	5	1 = Error detected during IPL process (If neither bit 5 nor bit 7 is on, the error occurred after control was passed to the operating system)
	6	1 = Configuration changed since last boot.
	7	1 = Error detected prior to IPL (in POST or firmware extended diagnostics)
4-7	**Note:** Time and Date are based upon the same values and time base as the RTAS Time-of-Day functions. Time of most recent error in BCD format: `HHMMSS00, where HH=00-23, MM=00-59, SS=00-59`	

Table 3. RTAS General Extended Error Log Format, Versions 1, 2 (continued)

Byte	Bit(s)	Description
8-11	Date of most recent error in BCD format: `YYYYMMDD, where YYYY=1995-future, MM=01-12, DD=01-31`	
12-39	Detailed log data (See Detail log formats, Table 4 on page 530 through Table 10 on page 533)	

Note: Time and Date values included in the CHRP Extended Error Log format (bytes 4-11) are recorded in Universal Time Coordinated (UTC) which essentially is Greenwich Mean Time. UTC is also the way time is reported from the Time of Day clock hardware. Be aware that UTC time is NOT the same as local time that is usually presented by the operating system. The system has built-in functions to manage time differences and takes into account special cases such as Daylight Savings Time. For example, you may see an AIX error log with an AIX time stamp of 12:00 pm, containing a CHRP error log in the Detail Data where the encoded time stamp is 5:00 pm. This difference is actually the difference between local time and UTC time.

CPU-Detected Errors, Versions 1, 2

Table 4. Error Log Detail for CPU-Detected Errors, Versions 1, 2

Byte	Bit(s)	Description
12	0	1 = CPU internal Error, other than cache **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = CPU internal cache error
	2	1 = External (L2) cache parity or multi-bit ECC error
	3	1 = External (L2) cache ECC single-bit error
	4	1 = Time-out error, waiting for memory controller
	5	1 = Time-out error, waiting for I/O
	6	1 = Address/Data parity error on Processor Bus
	7	1 = Transfer error on Processor Bus
13	Physical CPU ID number	
14-15	Identifier number of sender of data/address parity error, or element which timed out	
16-23	64-bit Memory Address for cache error (High-order bytes =0 if 32-bit addressing)	
24-39	Reserved	

Memory Controller-Detected Errors, Versions 1,2

Table 5. Error Log Detail for Memory Controller-Detected Errors, Versions 1, 2

Byte	Bit(s)	Description
12	0	1 = Uncorrectable Memory Error (parity or multiple bit ECC) **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = ECC correctable error
	2	1 = Correctable error threshold exceeded
	3	1 = Memory Controller internal error
	4	1 = Memory Address (Bad address going to memory)
	5	1 = Memory Data error (Bad data going to memory)
	6	1 = Memory bus/switch internal error
	7	1 = Memory time-out error
13	0	1 = Processor Bus parity error, detected by Memory Controller
	1	1 = Processor time-out error, detected by Memory Controller
	2	1 = Processor bus Transfer error
	3	1 = I/O Host Bridge time-out error, detected by Memory Controller
	4	1 = I/O Host Bridge address/data parity error, detected by Memory Controller
	5:7	Reserved
14	Physical Memory Controller number which detected error (0 if only one controller)	
15	Physical Memory Controller number which caused error (0 if only single memory controller, or if the error source is in main memory, not another memory controller)	
16-23	64-bit Memory Address (High-order bytes =0 if only 32-bit address)	
24-25	Syndrome bits (included if single-bit correctable error)	
26	Memory Card Number (0 if on system board)	

Table 5. Error Log Detail for Memory Controller-Detected Errors, Versions 1, 2 (continued)

Byte	Bit(s)	Description
27	Reserved	
28-31	0:31	Memory sub-elements (for example, SIMMs/DIMMs) implicated on this card (or system board), 1 bit per sub-element
32-33	Identifier number of sender of data/address parity error, or element which timed out.	
34-39	Reserved	

I/O-Detected Errors, Version 1

Table 6. Error Log Detail for I/O-Detected Errors, Version 1

Byte	Bit(s)	Description
12	0	1 = I/O Bus Address Parity Error **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = I/O Bus Data Parity Error
	2	1 = I/O Bus Time-out Error
	3	1 = I/O Device Internal Error
	4	1 = Signaling device is a PCI to non-PCI bridge chip, indicating an error on the secondary bus, for example, ISA IOCHK#.
	5	1 = Mezzanine/Processor Bus Address Parity Error
	6	1 = Mezzanine/Processor Bus Data Parity Error
	7	1 = Mezzanine/Processor Bus Time-out Error
13	0	1 = Bridge is connected to Processor Bus
	1	1 = Bridge is connected to Memory Controller via Mezzanine Bus
	2:7	Reserved
14	PCI Bus ID of the device signaling the error	
15	0:4	PCI Device ID of the device signaling the error
	5:7	PCI Function ID of the device signaling the error
16-17	PCI Device ID of the device signaling the error (from configuration register)	
18-19	PCI Vendor ID of the device signaling the error (from configuration register)	
20	PCI Revision ID of the device signaling the error (from configuration register)	
21	Slot Identifier number of the device signaling the error • '00' if system board device • 'FF' if multiple devices signaling an error	
22	PCI Bus ID of the sending device at the time of error	
23	0:4	PCI Device ID of the sending device at the time of error
	5:7	PCI Function ID of the sending device at the time of error
24-25	PCI Device ID of the sending device at the time of error (from configuration register)	
26-27	PCI Vendor ID of the sending device at the time of error (from configuration register)	
28	PCI Revision ID of the sending device at the time of error (from configuration register)	
29	Slot Identifier number of the sending device at the time of error • '00' if system board device • 'FF' if sender cannot be identified, or if no sender, for example, internal SERR#	
30-39	Reserved	

Power-On Self Test-Detected Errors, Versions 1, 2

Table 7. Error Log Detail for Power-On Self Test-Detected Errors, Versions 1, 2

Byte	Bit(s)	Description
12	0	1 = Firmware Error
	1	1 = Configuration Error
	2	1 = CPU POST Error
	3	1 = Memory POST Error
	4	1 = I/O Subsystem POST Error
	5	1 = Keyboard POST Error
	6	1 = Mouse POST Error
	7	1 = Graphic Adapter / Display POST Error
13	0	1 = Diskette Initial Program Load (IPL) Error
	1	1 = Drive Controller IPL Error (SCSI, IDE, etc.)
	2	1 = CD-ROM IPL Error
	3	1 = Hard disk IPL Error
	4	1 = Network IPL Error
	5	1 = Other IPL Device Error (Tape, Flash Card, etc.)
	6	Reserved
	7	1 = Self-test error in firmware extended diagnostics
14-25	Device Name (Open Firmware Device for which self-test failed. Name truncated if longer than 12 bytes.)	
26-29	POST Error Code	
30-31	Firmware Revision Level	
32-39	Location Name (platform-specific identifier which points to specific instance of failing device)	

Environmental and Power Warnings Events, Version 1

Table 8. Event Log Detail for Environmental and Power Warnings Events, Version 1

Byte	Bit(s)	Description
12-15	EPOW Sensor Value (low-order 4 bits contain the action code)	
16-39	Reserved	

Power Management Events, Versions 1, 2

Table 9. Event Log Detail for Power Management Events, Versions 1, 2

Byte	Bit(s)	Description
12-15	Integer identifier of the source of the power management event (product specific)	
16-39	Reserved	

Service Processor Errors, Versions 1, 2

Table 10. Vendor-specific Error Log Detail for Service Processor Errors, Versions 1, 2

Byte	Bit(s)	Description
12-15	Contains ASCII characters IBM<null> to indicate that this is an IBM-unique log format	
16	0	1 = Time-out on communication response from service processor
	1	1 = I/O (I2C) general bus error
	2	1 = Secondary I/O (I2C) general bus error
	3	1 = Internal service processor memory error
	4	1 = Service processor error accessing special registers
	5	1 = Service processor reports unknown communication error
	6	1 = Internal service processor firmware error
	7	1 = Other internal service processor hardware error
17	0	1 = Service processor error accessing Vital Product Data EEPROM
	1	1 = Service processor error accessing Operator Panel
	2	1 = Service processor error accessing Power Controller
	3	1 = Service processor error accessing Fan Sensor
	4	1 = Service processor error accessing Thermal Sensor
	5	1 = Service processor error accessing Voltage Sensor
	6:7	Reserved
18	0	1 = Service processor error accessing serial port
	1	1 = Service processor error accessing NVRAM
	2	1 = Service processor error accessing Real-Time Clock / Time-of-day clock
	3	1 = Service processor error accessing JTAG/COP controller/hardware
	4	1 = Service processor or RTAS detects loss of voltage from the TOD backup battery
	5:6	Reserved
	7	1 = Service processor caused a reboot of the system due to surveillance time-out
19	Reserved	
20:23	Sensor Token, if failing device is a sensor defined in the Open Firmware device tree (otherwise = 0) **Note:** If 64-bit system, only contains least significant 4 bytes	
24:27	Sensor Index, if failing device is a sensor defined in the Open Firmware device tree (otherwise = 0) **Note:** If 64-bit system, only contains least significant 4 bytes	
28-39	Reserved	

RPA Service Processor Detected Error Log format version 4

Table 11. RPA Service Processor Detected Error Log format version 4

Byte	Bit(s)	Description
16	0	1 = Time-out on communication response from service processor
	1	1 = I/O (I^2C) general bus error
	2	1 = Secondary I/O (I^2C) general bus error
	3	1 = Internal service processor memory error
	4	1 = Service processor error accessing special registers
	5	1 = Service processor reports unknown communication error
	6	1 = Internal service processor firmware error or incorrect version
	7	1 = Other internal service processor hardware error
17	0	1 = Service processor error accessing Vital Product Data EEPROM
	1	1 = Service processor error accessing Operator Panel
	2	1 = Service processor error accessing Power Controller
	3	1 = Service processor error accessing Fan Sensor
	4	1 = Service processor error accessing Thermal Sensor
	5	1 = Service processor error accessing Voltage Sensor
	6:7	Reserved
18	0	1 = Service processor error accessing serial port
	1	1 = Service processor detected NVRAM error
	2	1 = Service processor error accessing Real-Time Clock / Time-of-day clock
	3	1 = Service processor error accessing Scan controller/hardware
	4	1 = Service processor or RTAS detects loss of voltage from the TOD backup battery
	5	Reserved
	6	1 = Loss of Heartbeat from Service Processor
	7	1 = Service processor detected a surveillance time-out
19	0	1 = Power Controller Network general connection failure
	1	1 = Power Controller Network node failure
	2:3	Reserved
	4	1 = Service processor error accessing Power Controller Network
	5	1 = Non-Supported Hardware
	6	1 = Error detected while handling an attention/interrupt from system hardware
	7	Reserved
22:23	Sensor Token	
24:27	Sensor Index	

Table 11. RPA Service Processor Detected Error Log format version 4 (continued)

Byte	Bit(s)	Description
28	0	1 = Array or Logic Built In Self Test Error
	1	1 = Wire Test Error
	2	1 = Mainstore or Cache IPL Diagnostic ErrorReserved
	3	1 = Other IPL Diagnostic Error
	4	1 = Clock or PLL Error
	5	1 = Hardware Scan or Initialization Error
	6	1 = Chip ID Verification Error
	7	FRU Presence/Detect Error (Mis-plugged)
29:39	Reserved	

Version 2 Extension of CHRP Error Log Format

Since the original definition of the CHRP error log format, most additional requirements for error reporting have been for new, unique types of errors that could be supported through vendor-specific log formats. However, there are also some areas covered by the original definition where it has become apparent that more information is needed. Examples of this include support of problem reporting for I/O expansion units, and extended reporting of the causes of EPOW conditions. The log format definition in CHRP provides a version number, which is the first byte in the returned buffer (byte 0 of the fixed-part information), and is defined in base CHRP to have a value of 1. The extension described here uses that version number to create a Version 2 of the error log format. This version defines new fields within certain log areas that were reserved in Version 1, but does not change the meaning of any of the existing fields from Version 1, so that backward compatibility is preserved.

I/O Detected Errors, Version 2

Table 12. Error Log Detail for I/O-Detected Errors, Version 2

Byte	Bit(s)	Description
12	0	1 = I/O Bus Address Parity Error **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = I/O Bus Data Parity Error
	2	1 = I/O Bus Time-out Error
	3	1 = I/O Device Internal Error
	4	1 = Signaling device is a PCI to non-PCI bridge chip, indicating an error on the secondary bus, for example, ISA IOCHK#
	5	1 = Mezzanine/Processor Bus Address Parity Error
	6	1 = Mezzanine/Processor Bus Data Parity Error
	7	1 = Mezzanine/Processor Bus Time-out Error
13	0	1 = Bridge is connected to Processor Bus
	1	1 = Bridge is connected to Memory Controller via Mezzanine Bus
	2	1 = Bridge is connected to I/O Expansion Bus
	3	1 = Error on Processor Bus detected by I/O Expansion Bus controller **Note:** When this bit = 1, bits 5:7 of byte 12 indicate the type of processor bus error.
	4	1 = I/O Expansion Bus Parity Error
	5	1 = I/O Expansion Bus Time-out Error
	6	1 = I/O Expansion Bus Connection Failure
	7	1 = I/O Expansion Unit not in an operating state (powered down, off-line)
14	PCI Bus ID of the device signaling the error	
15	0:4	PCI Device ID of the device signaling the error
	5:7	PCI Function ID of the device signaling the error
16-17	PCI Device ID of the device signaling the error (from configuration register)	
18-19	PCI Vendor ID of the device signaling the error (from configuration register)	
20	PCI Revision ID of the device signaling the error (from configuration register)	
21	Slot Identifier number of the device signaling the error • '00' if system board device • 'FF' if multiple devices signaling an error	
22	PCI Bus ID of the sending device at the time of error	

Table 12. Error Log Detail for I/O-Detected Errors, Version 2 (continued)

Byte	Bit(s)	Description
23	0:4	PCI Device ID of the sending device at the time of error
	5:7	PCI Function ID of the sending device at the time of error
24-25	PCI Device ID of the sending device at the time of error (from configuration register)	
26-27	PCI Vendor ID of the sending device at the time of error (from configuration register)	
28	PCI Revision ID of the sending device at the time of error (from configuration register)	
29	Slot Identifier number of the sending device at the time of error • '00' if system board device • 'FF' if sender cannot be identified, or if no sender (for example, internal SERR#)	
30-39	Reserved	

Environmental and Power Warnings Event Log, Version 2

Table 13. Detail for Environmental and Power Warnings Event Log, Version 2

Byte	Bit(s)	Description
12-15	EPOW Sensor Value (low-order 4 bits contain the action code)	
16	0	1 = EPOW detected by a defined sensor (see bytes 20-35)
	1	1 = EPOW caused by a power fault (see byte 17)
	2	1 = EPOW caused by fan failure
	3	1 = EPOW caused by over-temperature condition
	4	1 = EPOW warning due to loss of redundancy (For example, single failure in a group of N+1 power supplies, fans, etc.)
	5:7	Reserved
17	0	1 = General EPOW power fault due to an unspecified cause
	1	1 = EPOW power fault specifically due to loss of power source
	2	1 = EPOW power fault specifically due to internal power supply failure
	3	1 = EPOW power fault specifically due to manual activation of power-off switch
	4:7	Reserved
18-19	Reserved	
20-23	Token number of specific sensor causing the EPOW condition (If no CHRP-defined sensor caused the EPOW condition, this and the following values are set to 0. For example, a power loss condition currently does not have a defined CHRP sensor token.)	
24-27	Index number of specific sensor causing the EPOW condition	
28-31	Sensor value	
32-35	Sensor status (Status return value that would be returned from a get-sensor-state call)	
36-39	Reserved	

RTAS General Extended Error Log Format, Version 3

Table 14. RTAS General Extended Error Log Format, Version 3

Byte	Bit(s)	Description
0	0	1 = Log Valid
	1	1 = Unrecoverable Error
	2	1 = Recoverable (correctable or successfully retried) Error
	3	1 = Unrecoverable Error, Bypassed - Degraded operation (for example, Single CPU taken off-line, bad cache bypassed)
	4	1 = Predictive Error - Error is recoverable, but indicates a trend toward unrecoverable failure (for example, correctable ECC error threshold)
	5	1 = New Log (always 1 for data returned from RTAS)
	6	Always 1 on RPA implementations indicating Big-Endian
	7	Reserved
1	0	1=A platform-specific special error. Bits 4-7 contain encoded value for this platform
	1:3	Reserved
	4:7	Platform-specific value assigned for reporting unique errors
2	0	Set to 1 - (Indicates log is in PowerPC format)
	1:2	Reserved
	3	1 = No failing address was available for recording within the log's Detailed Log Data, so the address field is invalid
	4:7	Log format indicator, defines format used for bytes 12-39: • (0) Reserved • (1) CPU-detected failure, see Table 15 on page 540 • (2) Memory-detected failure, see Table 16 on page 541 • (3) I/O-detected failure, see Table 17 on page 542 • (4) Power-On Self Test (POST) failure, see Table 18 on page 543 • (5) Environmental and Power Warning, see Table 19 on page 543 • (6) Power Management Event, see Table 9 on page 532 • (7-11) Reserved • (12-15) Reserved for Vendor-specific • (12) IBM, Diagnostic Log, see diagnostic information manual • (13) IBM, Service Processor errors, see Table 21 on page 545

Table 14. RTAS General Extended Error Log Format, Version 3 (continued)

Byte	Bit(s)	Description
3	0	1 = Error may be caused by defect in software or firmware
	1	1 = Error is isolated to a failing unit which can be replaced concurent with system operation
	2	1 = Error is isolated to a group of failing units that should be replaced as a group not in sequence
	3	Reserved
	4	1 = Error is residual information from a failure which occurred prior to the last boot (for example, stored information about a machine check that crashed the system before RTAS could report it to the OS)
	5	1 = Error detected during IPL process (If neither bit 5 nor bit 7 is on, the error occurred after control was passed to the operating system)
	6	1 = Configuration changed since last boot.
	7	1 = Error detected prior to IPL (in POST or firmware extended diagnostics)
4-7	**Note:** Time and Date are based upon the same values and time base as the RTAS Time-of-Day functions. Time of most recent error in BCD format: `HHMMSS00, where HH=00-23, MM=00-59, SS=00-59`	
8-11	Date of most recent error in BCD format: `YYYYMMDD, where YYYY=1995-future, MM=01-12, DD=01-31`	
12-39	Detailed log data (See Detail log formats, Table 15 through Table 21 on page 545)	

CPU-Detected Errors, Version 3

Table 15. Error Log Detail for CPU-Detected Errors, Version 3

Byte	Bit(s)	Description
12	0	1 = CPU internal Error, other than cache **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = CPU internal cache error
	2	1 = External (L2) cache parity or multi-bit ECC error
	3	1 = External (L2) cache ECC single-bit error
	4	1 = Time-out error, waiting for memory controller
	5	1 = Time-out error, waiting for I/O
	6	1 = System bus parity error
	7	1 = System bus protocol/transfer error
13	Physical CPU ID number	
14-15	Identifier number of sender of data/address parity error, or element which timed out	
16-23	64-bit Memory Address for cache error (High-order bytes =0 if 32-bit addressing)	
24-39	Reserved	

Memory Controller- and System Core-Detected Errors, Version 3

Table 16. Error Log Detail for Memory Controller-Detected Errors, Version 3

Byte	Bit(s)	Description
12	0	1 = Uncorrectable Memory Error (parity or multiple bit ECC) **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = ECC correctable error
	2	1 = Correctable error threshold exceeded
	3	1 = Memory Controller internal error
	4	1 = Memory Address (Bad address going to memory)
	5	1 = Memory Data error (Bad data going to memory)
	6	1 = Memory bus/switch internal error
	7	1 = Memory time-out error
13	0	1 = System Bus parity error, detected by Memory Controller
	1	1 = System time-out error, detected by Memory Controller
	2	1 = System bus protocol/transfer error
	3	1 = I/O Host Bridge time-out error, detected by Memory Controller
	4	1 = I/O Host Bridge address/data parity error, detected by Memory Controller
	5	Reserved
	6	1 = System support function error
	7	1 = System bus internal hardware/switch error
14	Physical Memory Controller number which detected error (0 if only one controller)	
15	Physical Memory Controller number which caused error (0 if only single memory controller, or if the error source is in main memory, not another memory controller)	
16-23	64-bit Memory Address (High-order bytes =0 if only 32-bit address)	
24-25	Syndrome bits (included if single-bit correctable error)	
26	Memory Card Number (0 if on system board)	
27	Reserved	
28-31	0:31	Memory sub-elements (for example, SIMMs/DIMMs) implicated on this card (or system board), 1 bit per sub-element
32-33	Identifier number of sender of data/address parity error, or element which timed out.	
34-39	Reserved	

I/O-Detected Errors, Version 3

Table 17. Error Log Detail for I/O-Detected Errors, Version 3

Byte	Bit(s)	Description
12	0	1 = I/O Bus Address Parity Error **Note:** If failure cannot be isolated, these bits may all be 0
	1	1 = I/O Bus Data Parity Error
	2	1 = I/O Bus Time-out Error
	3	1 = I/O Device Internal Error
	4	1 = Signaling device is a PCI to non-PCI bridge chip, indicating an error on the secondary bus, for example, ISA IOCHK#.
	5	1 = Mezzanine/System Bus Address Parity Error
	6	1 = Mezzanine/System Bus Data Parity Error
	7	1 = Mezzanine/System Bus Time-out Error
13	0	1 = Bridge is connected to System Bus
	1	1 = Bridge is connected to Memory Controller via Mezzanine Bus
	2	1 = Bridge is connected to I/O expansion bus
	3	1 = Error on system bus detected by I/O controller (Note: When this bit =1, bits 5:7 of byte 12 indicate the type of system bus error
	4	1 = I/O expansion bus parity error
	5	1 = I/O expansion bus time-out, access, or other error
	6	1 = I/O expansion bus connection failure
	7	1 = I/O expansion unit not in an operating state (powered-down or off-line)
14	PCI Bus ID of the device signaling the error	
15	0:4	PCI Device ID of the device signaling the error
	5:7	PCI Function ID of the device signaling the error
16-17	PCI Device ID of the device signaling the error (from configuration register)	
18-19	PCI Vendor ID of the device signaling the error (from configuration register)	
20	PCI Revision ID of the device signaling the error (from configuration register)	
21	Slot Identifier number of the device signaling the error • '00' if system board device • 'FF' if multiple devices signaling an error	
22	PCI Bus ID of the sending device at the time of error	
23	0:4	PCI Device ID of the sending device at the time of error
	5:7	PCI Function ID of the sending device at the time of error
24-25	PCI Device ID of the sending device at the time of error (from configuration register)	
26-27	PCI Vendor ID of the sending device at the time of error (from configuration register)	
28	PCI Revision ID of the sending device at the time of error (from configuration register)	
29	Slot Identifier number of the sending device at the time of error • '00' if system board device • 'FF' if sender cannot be identified, or if no sender, for example, internal SERR#	
30-39	Reserved	

Power-On Self Test-Detected Errors, Version 3

Table 18. Error Log Detail for Power-On Self Test-Detected Errors, Version 3

Byte	Bit(s)	Description
12	0	1 = Firmware Error
	1	1 = Configuration Error
	2	1 = CPU POST Error
	3	1 = Memory POST Error
	4	1 = I/O Subsystem POST Error
	5	1 = Keyboard POST Error
	6	1 = Mouse POST Error
	7	1 = Graphic Adapter / Display POST Error
13	0	1 = Diskette Initial Program Load (IPL) Error
	1	1 = Drive Controller IPL Error (SCSI, IDE, etc.)
	2	1 = CD-ROM IPL Error
	3	1 = Hard disk IPL Error
	4	1 = Network IPL Error
	5	1 = Other IPL Device Error (Tape, Flash Card, etc.)
	6	Reserved
	7	1 = Self-test error in firmware extended diagnostics
14-25	Device Name (Open Firmware Device for which self-test failed. Name truncated if longer than 12 bytes.)	
26-29	POST Error Code	
30-31	Firmware Revision Level	
32-39	Location Name (platform-specific identifier which points to specific instance of failing device)	

Environmental and Power Warnings Events, Version 3

Table 19. Event Log Detail for Environmental and Power Warnings Events, Version 3

Byte	Bit(s)	Description
12-15	EPOW Sensor Value (low-order 4 bits contain the action code)	
16	0	1 = EPOW detected by a defined sensor (see bytes 20:35)
	1	1 = EPOW caused by a power fault (see byte 17)
	2	1 = EPOW caused by fan failure
	3	1 = EPOW caused by over-temperature condition
	4	1 = EPOW warning due to loss of redundancy (For example, single failure in group of power supplies, fans, or such)
	5:7	Reserved
17	0	1 = General EPOW power fault due to an unspecified cause
	1	1 = EPOW power fault specifically due to loss of power source
	2	1 = EPOW power fault specifically due to internal power supply failure
	3	1 = EPOW power fault specifically due to manual power off
	4:7	Reserved

Table 19. Event Log Detail for Environmental and Power Warnings Events, Version 3 (continued)

Byte	Bit(s)	Description
18-19	Reserved	
20-23	Token number of the specific sensor causing the EPOW	
24-27	Index number of the specific sensor causing the EPOW	
28-31	Sensor value	
32-35	Sensor status	
36-39	Reserved	

Power Management Events, Version 3

Table 20. Event Log Detail for Power Management Events, Version 3

Byte	Bit(s)	Description
12-15	Integer identifier of the source of the power management event (product specific)	
16-39	Reserved	

Service Processor Errors, Version 3

Table 21. Vendor-specific Error Log Detail for Service Processor Errors, Version 3

Byte	Bit(s)	Description
12-15	Contains ASCII characters IBM<null> to indicate that this is an IBM-unique log format	
16	0	1 = Time-out on communication response from service processor
	1	1 = I/O (I2C) general bus error
	2	1 = Secondary I/O (I2C) general bus error
	3	1 = Internal service processor memory error
	4	1 = Service processor error accessing special registers
	5	1 = Service processor reports unknown communication error
	6	1 = Internal service processor firmware error
	7	1 = Other internal service processor hardware error
17	0	1 = Service processor error accessing Vital Product Data EEPROM
	1	1 = Service processor error accessing Operator Panel
	2	1 = Service processor error accessing Power Controller
	3	1 = Service processor error accessing Fan Sensor
	4	1 = Service processor error accessing Thermal Sensor
	5	1 = Service processor error accessing Voltage Sensor
	6:7	Reserved
18	0	1 = Service processor error accessing serial port
	1	1 = Service processor error accessing NVRAM
	2	1 = Service processor error accessing Real-Time Clock / Time-of-day clock
	3	1 = Service processor error accessing JTAG/COP controller/hardware
	4	1 = Service processor or RTAS detects loss of voltage from the TOD backup battery
	5:6	Reserved
	7	1 = Service processor detected a surveillance time-out
19	0	1 = Power control network general connection failure
	1	1 = Power control network node failure
	2:3	Reserved
	4	1 = Service processor error accessing power control network
	5:7	Reserved
20:23	Sensor Token, if failing device is a sensor defined in the Open Firmware device tree (otherwise = 0) **Note:** If 64-bit system, only contains least significant 4 bytes	

Table 21. Vendor-specific Error Log Detail for Service Processor Errors, Version 3 (continued)

Byte	Bit(s)	Description
24:27	Sensor Index, if failing device is a sensor defined in the Open Firmware device tree (otherwise = 0) **Note:** If 64-bit system, only contains least significant 4 bytes	
28-39	Reserved	

Extended Log Debug Data

The location code string for IBM error logs starts at byte 44 of the Extended Error Log Format, and ends in a NULL (00) character. The rest of the log area beyond that point contains product-specific debug data that is usually used for bring-up, test, and field debug situations. However, it helps to have some defined structure to the data to make it easier to read or, if needed, write programs to look for specific values. For this reason, the individual pieces of debug data are recorded in the extended log area in a series of one or more records, where each record contains a length and identifier field in addition to the actual data. Table 22 defines the general layout of these data records.

General Layout of Debug Data, All Versions

Table 22. General Format of Debug Data, All Versions

Byte	Bit(s)	Description
0-1	Total length (N) of debug data record, including length and identifier fields **Note:** Each record is aligned to start on a fullword boundary, padding previous records (or, in the case of the first record, the preceding location code string) with NULLs. The end of the list of debug data records is indicated by an empty record with a length = 0x0002, since the length itself takes two bytes.	
2-3	Two character ASCII identifier of the data • 00 - 99 are reserved for common registered data types • AA - ZZ and A0 - Z9 are for product-specific use at the discretion of the developer. Preferably, something mnemonic should be used.	
4-(N-1)	Actual debug data	

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