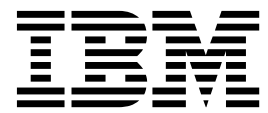


Power Systems

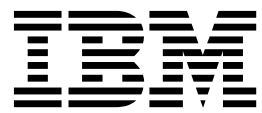
*IBM Flex System p24L Compute Node  
Installation and Service Guide*





Power Systems

*IBM Flex System p24L Compute Node  
Installation and Service Guide*



**Note**

Before using this information and the product it supports, read the information in “Safety notices” on page v, “Notices,” on page 459, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM Power Systems servers that contain the POWER7 processor and to all associated models.

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## Safety notices

Safety notices may be printed throughout this guide.

- **DANGER** notices call attention to a situation that is potentially lethal or extremely hazardous to people.
- **CAUTION** notices call attention to a situation that is potentially hazardous to people because of some existing condition.
- **Attention** notices call attention to the possibility of damage to a program, device, system, or data.

## World Trade safety information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, safety information documentation is included in the publications package (such as in printed documentation, on DVD, or as part of the product) shipped with the product. The documentation contains the safety information in your national language with references to the U.S. English source. Before using a U.S. English publication to install, operate, or service this product, you must first become familiar with the related safety information documentation. You should also refer to the safety information documentation any time you do not clearly understand any safety information in the U.S. English publications.

Replacement or additional copies of safety information documentation can be obtained by calling the IBM Hotline at 1-800-300-8751.

## German safety information

Das Produkt ist nicht für den Einsatz an Bildschirmarbeitsplätzen im Sinne § 2 der Bildschirmarbeitsverordnung geeignet.

## Laser safety information

The servers can use I/O cards or features that are fiber-optic based and that utilize lasers or LEDs.

## Laser compliance

The servers may be installed inside or outside of an IT equipment rack.

## DANGER

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

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

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

To Disconnect:

1. Turn off everything (unless instructed otherwise).
2. Remove the power cords from the outlets.
3. Remove the signal cables from the connectors.
4. Remove all cables from the devices.

To Connect:

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

(D005)

## DANGER



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

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



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

#### CAUTION

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

(R001)

**CAUTION:**

Removing components from the upper positions in the rack cabinet improves rack stability during relocation. Follow these general guidelines whenever you relocate a populated rack cabinet within a room or building:

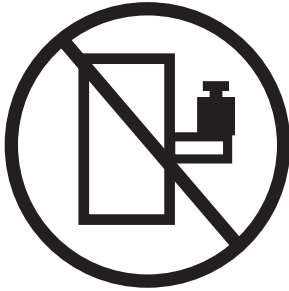
- Reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. When possible, restore the rack cabinet to the configuration of the rack cabinet as you received it. If this configuration is not known, you must observe the following precautions:
  - Remove all devices in the 32U position and above.
  - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.
  - Ensure that there are no empty U-levels between devices installed in the rack cabinet below the 32U level.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 230 mm (30 x 80 in.).
- Ensure that all devices, shelves, drawers, doors, and cables are secure.
- Ensure that the four leveling pads are raised to their highest position.
- Ensure that there is no stabilizer bracket installed on the rack cabinet during movement.
- Do not use a ramp inclined at more than 10 degrees.
- When the rack cabinet is in the new location, complete the following steps:
  - Lower the four leveling pads.
  - Install stabilizer brackets on the rack cabinet.
  - If you removed any devices from the rack cabinet, repopulate the rack cabinet from the lowest position to the highest position.
- If a long-distance relocation is required, restore the rack cabinet to the configuration of the rack cabinet as you received it. Pack the rack cabinet in the original packaging material, or equivalent. Also lower the leveling pads to raise the casters off of the pallet and bolt the rack cabinet to the pallet.

(R002)

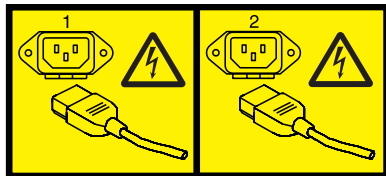
(L001)



(L002)



(L003)



or



All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with IEC 60825 as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

**CAUTION:**

This product might contain one or more of the following devices: CD-ROM drive, DVD-ROM drive, DVD-RAM drive, or laser module, which are Class 1 laser products. Note the following information:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of the controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

(C026)

**CAUTION:**

Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. (C027)

**CAUTION:**

This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)

**CAUTION:**

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following information: laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)

**CAUTION:**

The battery contains lithium. To avoid possible explosion, do not burn or charge the battery.

*Do Not:*

- \_\_\_ Throw or immerse into water
- \_\_\_ Heat to more than 100°C (212°F)
- \_\_\_ Repair or disassemble

Exchange only with the IBM-approved part. Recycle or discard the battery as instructed by local regulations. In the United States, IBM has a process for the collection of this battery. For information, call 1-800-426-4333. Have the IBM part number for the battery unit available when you call. (C003)

## **Power and cabling information for NEBS (Network Equipment-Building System) GR-1089-CORE**

The following comments apply to the servers that have been designated as conforming to NEBS (Network Equipment-Building System) GR-1089-CORE:

The equipment is suitable for installation in the following:

- Network telecommunications facilities
- Locations where the NEC (National Electrical Code) applies

The intrabuilding ports of this equipment are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intrabuilding ports of this equipment *must not* be metalically connected to the interfaces that connect to the OSP (outside plant) or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to connect these interfaces metalically to OSP wiring.

**Note:** All Ethernet cables must be shielded and grounded at both ends.

The ac-powered system does not require the use of an external surge protection device (SPD).

The dc-powered system employs an isolated DC return (DC-I) design. The DC battery return terminal *shall not* be connected to the chassis or frame ground.

---

## Chapter 1. Introduction

The IBM® Flex System p24L Compute Node is based on IBM POWER® technologies. These compute nodes run in IBM Flex System Enterprise Chassis units to provide a high-density, high-performance compute-node environment with advanced processing technology.

The *Installation and User's Guide* includes the compute node information on the *IBM Flex System Enterprise Chassis Documentation* CD. All of the following information is in the document and also in the information center:

- Setting up the compute node
- Starting and configuring the compute node
- Installing optional hardware devices
- A reference to more information about installing supported operating systems
- Performing basic troubleshooting of the compute node


Packaged with the printed *Installation and User's Guide* are software CDs that help you to configure hardware, install device drivers, and install the operating system.


The compute node comes with a limited warranty. For information about the terms of the warranty and getting service and assistance, see the information center or the *Warranty and Support Information* document on the *IBM Flex System Enterprise Chassis Documentation* CD.

The compute node might have features that are not described in the documentation that comes with the compute node. Occasionally, the documentation might be updated to include information about those features. Technical updates might also become available to provide additional information that is not included in the original compute node documentation. The most recent version of all IBM Flex System Enterprise Chassis documentation is in the IBM Flex System Information Center.

The online information for the IBM Flex System Enterprise Chassis is available in the <http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp>.

### Related information:

 <http://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/home.html>

 <http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp>

---

## Product registration

Record vital data about your compute node.

## Vital product data

Print Table 1 and use it to record information about your compute node.

You will need this information when you register the compute node with IBM. You can register the compute node at <http://www.ibm.com/support/mynotifications>.

To determine the values for your compute node, use the management module and the **lsvpd** command. Download and install the service and productivity tools for the Linux operating system to install the **lsvpd** command.

The model number and serial number are on the ID label that is behind the control panel door on the front of the compute node, and on a label on the side of the compute node that is visible when the compute node is not in the IBM Flex System Enterprise Chassis.

A set of blank labels comes with the compute node. When you install the compute node in the IBM Flex System Enterprise Chassis, write identifying information on a label and place the label on the bezel. See the documentation for your IBM Flex System Enterprise Chassis for the location of the label placement.

**Important:** Do not place the label where it blocks any ventilation holes on the compute node or the IBM Flex System Enterprise Chassis.

Table 1. Vital product data

Vital product data field	Vital product data	How to find this data
Product name	IBM Flex System p24L Compute Node	
Type model number	IBM Flex System p24L Compute Node: 1457-7FL	<ul style="list-style-type: none"><li>• For FSM:<ul style="list-style-type: none"><li>– Chassis Manager in the management software web interface of the IBM Flex System Manager</li></ul></li><li>• For Hardware Management Console (HMC):<ol style="list-style-type: none"><li>1. In the navigation area, click <b>Systems Management &gt; Servers</b>.</li><li>2. In the content pane, select the server you want to work with.</li><li>3. Click <b>Tasks &gt; Properties</b>.</li></ol></li><li>• For Integrated Virtualization Manager (IVM), see IVM lssyscfg command (<a href="http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hcg/lssyscfg.htm">http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hcg/lssyscfg.htm</a>).</li></ul>

Table 1. Vital product data (continued)

Vital product data field	Vital product data	How to find this data
Serial number	_____ (7 characters)	<ul style="list-style-type: none"> <li>For FSM: <ul style="list-style-type: none"> <li>Chassis Manager in the management software web interface of the IBM Flex System Manager</li> </ul> </li> <li>For HMC: <ol style="list-style-type: none"> <li>In the navigation area, click <b>Systems Management &gt; Servers</b>.</li> <li>In the content pane, select the server you want to work with.</li> <li>Click <b>Tasks &gt; Properties</b>.</li> </ol> </li> <li>For IVM, see IVM lssyscfg command.</li> </ul>
System unique ID	_____ (12 characters)	<code>lsvpd   grep SU</code> command
Worldwide port number	_____ (12 characters)	<code>lsvpd   grep WN</code> command
Brand	B0 (B followed by zero)	<code>lsvpd   grep BR</code> command

## Related documentation

Documentation for the IBM Flex System p24L Compute Node includes PDF files on the *IBM Flex System Enterprise Chassis Documentation* CD and in the information center.

The most recent version of all IBM Flex System Enterprise Chassis documentation is in the IBM Flex System Information Center.

PDF versions of the following documents are on the *IBM Flex System Enterprise Chassis Documentation* CD and in the information center:

- *Problem Determination and Service Guide*

This document contains information to help you solve problems, and it contains information for service technicians.

- *Safety Information*

This document contains translated caution and danger statements. Each caution and danger statement that appears in the documentation has a number that you can use to locate the corresponding statement in your language in the *Safety Information* document.

- *Warranty and Support Information*

This document contains information about the terms of the warranty and about getting service and assistance.

The compute node might have features that are not described in the documentation that comes with the compute node. Occasional updates to the documentation might include information about those features, or technical updates might be available to provide additional information that is not included in the documentation that comes with the compute node.

Review the IBM Flex System Information Center or the *Planning Guide* and the *Installation Guide* for your IBM Flex System Enterprise Chassis. The information can help you prepare for system installation and configuration. The most current version of each document is available in the IBM Flex System Information Center.

**Related information:**

 [IBM Flex System Information Center](#)

---

## IBM documentation CD

You can run the *IBM Flex System Enterprise Chassis Documentation* CD on any personal computer that meets the hardware and software requirements.

The CD contains documentation for your compute node in a PDF file and includes the IBM documentation browser to help you find information quickly.

### Hardware and software requirements

The IBM *Documentation* CD requires the following minimum hardware and software levels.

- Microsoft Windows XP Professional, Windows 2000, or Red Hat Enterprise Linux
- 100 MHz Microprocessor
- 32 MB of RAM
- Adobe Acrobat Reader 3.0 (or later) or xpdf viewer, which comes with Linux operating systems

### Using the documentation browser

Use the documentation browser to browse the contents of the CD, to read brief descriptions of the documents, and to view documents by using Adobe Acrobat Reader or xpdf viewer.

### About this task

The documentation browser automatically detects the regional settings in your system and displays the documents in the language for that region (if available). If a document is not available in the language for that region, the English-language version is displayed.

To start the documentation browser, use one of the following procedures:

- If Autostart is enabled, insert the CD into the CD or DVD drive. The documentation browser starts automatically.
- If Autostart is disabled or is not enabled for all users, use one of the following procedures:
  - If you are using a Windows operating system, insert the CD into the CD or DVD drive and click **Start > Run**. In the **Open** field, type the following string, where *e* is the drive letter of the CD or DVD drive, and click **OK**:  
`e:\win32.bat`
  - If you are using Red Hat Enterprise Linux, insert the CD into the CD or DVD drive, and then run the following command from the `/mnt/cdrom` directory:  
`sh runlinux.sh`



Select the compute node from the **Product** menu. The **Available Topics** list displays all the documents for the compute node. Some documents might be in folders. A plus sign (+) indicates each folder or document that has additional documents under it. Click the plus sign to display the additional documents.

When you select a document, a description of the document is displayed under **Topic Description**. To select more than one document, press and hold the Ctrl key while you select the documents. Click **View Book** to view the selected documents in Acrobat Reader or xpdf viewer.

To search all the documents, type a word or text string in the **Search** field and click **Search**. The documents in which the word or text string occurs are listed in order of the most occurrences. Click a document to view it, and press Ctrl+F to use the Acrobat Reader search function, or press Alt+F to use the xpdf viewer search function within the document.

---

## Notices and statements

The CAUTION and DANGER statements in this document are also in the multilingual *Safety Information*. Each statement is numbered for reference to the corresponding statement in your language in the *Safety Information* document.

The following notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage might occur.
- **CAUTION:** These statements indicate situations that can be potentially hazardous to you. A CAUTION statement is placed just before the description of a potentially hazardous procedural step or situation.
- **DANGER:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A DANGER statement is placed just before the description of a potentially lethal or extremely hazardous procedural step or situation.

---

## Features and specifications

Features and specifications of the IBM Flex System p24L Compute Node are summarized in this overview.

The IBM Flex System p24L Compute Node is a one-bay compute node and is used in an IBM Flex System Enterprise Chassis.

### Notes:

- Power, cooling, removable-media drives, external ports, and advanced system management are provided by the IBM Flex System Enterprise Chassis.
- The operating system in the compute node must provide support for the Universal Serial Bus (USB) to enable the compute node to recognize and communicate internally with the removable-media drives and front-panel USB ports.

<p><b>Core electronics:</b></p> <p>64-bit 2 x POWER7® processors</p> <ul style="list-style-type: none"> <li>Model 1457-7FL: <ul style="list-style-type: none"> <li>16-way SMP 1-bay compute node: 2 socket, 8-core at 3.2 or 3.5 GHz</li> <li>12-way SMP 1-bay compute node: 2 socket, 6-core at 3.7 GHz</li> </ul> </li> <li>16 DIMM DDR3 slots. Maximum capacity is 512 GB. With hard disk drives (HDDs) or solid-state drives (SSDs) installed, supports 4 GB and 8 GB very low profile (VLP) DIMMs. With SSDs installed or in diskless configurations, also supports 2 GB, 16 GB, and 32 GB low profile (LP) DIMMs.</li> </ul> <p><b>POWER7 IOC I/O hub x 2</b></p> <p><b>On-board, integrated features:</b></p> <ul style="list-style-type: none"> <li>Service processor: IPMI, serial over LAN (SOL)</li> <li>SAS controller</li> <li>USB 2.0</li> </ul> <p><b>Local storage:</b></p> <ul style="list-style-type: none"> <li>Zero, one, or two SAS 2.5 in. 300 GB, 600 GB, or 900 GB HDDs</li> <li>Zero, one, or two SATA 1.8 in. 177 GB SSDs with SAS-to-SATA conversion</li> <li>Hardware mirroring supported</li> </ul>	<p><b>Network and storage adapter card I/O options:</b></p> <p>For a mapping of location codes, see “System-board connectors” on page 12.</p> <ul style="list-style-type: none"> <li>1 Gb Ethernet 4-port or 10 Gb Ethernet KR 4-port card or 8-port 10 Gb converged network adapter card in the I/O expansion card slots (P1-C18, P1-C19)</li> <li>8 Gb 2-port Fibre Channel cards in I/O expansion card slot P1-C19</li> <li>2-port 10 Gb RoCE cards in I/O expansion card slot P1-C19</li> <li>2-port 4X InfiniBand QDR network adapter form factor expansion card in slot P1-C19</li> </ul> <p><b>Integrated functions:</b></p> <ul style="list-style-type: none"> <li>Two 1 Gb Ethernet ports for communication with the management module</li> <li>Automatic compute node restart</li> <li>SOL over the management network</li> <li>Single USB 2.0 on base system board for communication with removable-media drives</li> <li>Optical media available by shared chassis feature</li> </ul> <p><b>Environment:</b></p> <p>These compute nodes comply with ASHRAE class A3 specifications. For details, see the Environment specifications at <a href="http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8721.doc/features_and_specifications.html">http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8721.doc/features_and_specifications.html</a>.</p> <p><b>Size:</b></p> <ul style="list-style-type: none"> <li>Height: 55 mm (2.2 in.)</li> <li>Depth: 492 mm (19.4 in.)</li> <li>Width: 215 mm (8.5 in.)</li> </ul>	<p><b>Systems management:</b></p> <ul style="list-style-type: none"> <li>Supported by IBM Flex System Enterprise Chassis management module (CMM)</li> <li>Front panel LEDs</li> <li>Management console: IBM Flex System Manager, Hardware Management Console (HMC), or Integrated Virtualization Manager (IVM)</li> </ul> <p><b>Note:</b> The compute node can be managed by only one management console at a time.</p> <ul style="list-style-type: none"> <li>Energy scale thermal management for power management, power oversubscription (throttling), and environmental sensing</li> <li>Concurrent code update by using IBM Flex System Manager Update Manager, Inventory Collection, Multiple VIOS, and PowerVM® Enterprise</li> </ul> <p><b>Reliability and service features:</b></p> <ul style="list-style-type: none"> <li>Dual alternating current power supply</li> <li>IBM Flex System Enterprise Chassis: chassis redundant and hot-plug power and cooling modules</li> <li>Boot-time processor deallocation</li> <li>Compute node hot plug</li> <li>Customer setup and expansion</li> <li>Automatic reboot on power loss</li> <li>Internal and chassis-external temperature monitors</li> <li>ECC, chipkill memory</li> <li>System management alerts</li> <li>Light path diagnostics</li> <li>Electronic Service Agent™ call-home capability</li> </ul> <p><b>Electrical input:</b> 12 V dc</p> <p><b>Security:</b> Fully compliant with NIST 800-131A. The security cryptography mode set by the managing device (CMM or FSM node) determines the security mode in which the compute node operates.</p>
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See the ServerProven website for information about supported operating-system versions and all compute node optional devices.

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## What your compute node offers

The design of the compute node takes advantage of advancements in chip technology, memory management, and data storage.

The compute node uses the following features and technologies:

- **Service processor**

The service processor for the IBM Flex System p24L Compute Node provides support for the following functions:

- Intelligent Platform Management Interface (IPMI)
- The operating system
- Power control and advanced power management
- Reliability, availability, and serviceability (RAS) features
- Serial over LAN (SOL)
- Continuous health monitoring and control
- Configurable notification and alerts
- Event logs that are time stamped and saved in nonvolatile memory and that can be attached to email alerts
- Point-to-Point Protocol (PPP) support
- Remote power control
- Remote firmware update and access to critical compute node settings

- **Disk drive support**

The compute node supports either Serial Advanced Technology Attachment (SATA) solid-state drives (SSDs) or serial-attached SCSI (SAS) hard disk drives (HDDs) in one of the following configurations:

- Up to two 1.8 in. SATA SSDs
- Up to two 2.5 in. SAS HDDs

- **Impressive performance using the latest microprocessor technology**

The compute node comes with two POWER7 microprocessors for the IBM Flex System p24L Compute Node.

- **I/O expansion**

The compute node has connectors on the system board for optional PCI Express (PCIe) network adapter cards for adding more network communication capabilities to the compute node.

- **Large system memory capacity**

The memory bus in the IBM Flex System p24L Compute Node supports up to 512 GB of system memory. For the official list of supported DIMMs, see <http://www.ibm.com/systems/info/x86servers/serverproven/compat/us/> (<http://www-03.ibm.com/servers/eserver/serverproven/compat/us/>).

- **Light path diagnostics**

Light path diagnostics provides light-emitting diodes (LEDs) to help diagnose problems. An LED on the compute node control panel is lit if an unusual condition or a problem occurs. If this happens, you can look at the LEDs on the system board to locate the source of the problem.

- **Power throttling**

If your IBM Flex System Enterprise Chassis supports power management, the power consumption of the compute node can be dynamically managed through the management module. For more information, see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm\\_product\\_page.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm_product_page.html) or the IBM support site at <http://www.ibm.com/support/entry/portal/Overview>.



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## Chapter 2. Power, controls, indicators, and connectors

You can use the control panel to turn the compute nodes on or off and to view some controls and indicators. Other indicators are on the system board. The system board also has connectors for various components.

---

### Compute node control panel button and LEDs

Compute node control panel button and LEDs provide operational controls and status indicators.

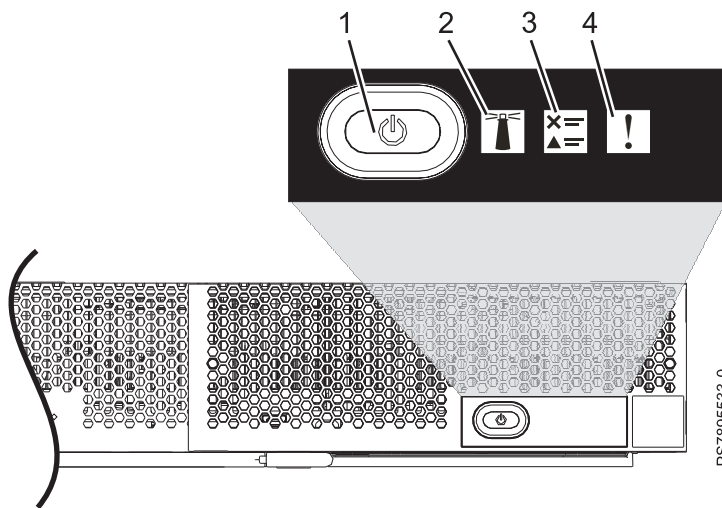


Figure 1. Compute node control panel button and LEDs

1. **Power-control button and light path LED:** Press this button to turn on or turn off the compute node or to view light path diagnostic LEDs.

The power-control button has an effect only if local power control is enabled for the compute node. Local power control is enabled and disabled through the web interface of the management module.

Press the power-control button for 5 seconds to begin powering down the compute node.

The green light path LED indicates the power status of the compute node in the following manner:

- Flashing rapidly: The service processor is initializing the compute node.
- Flashing slowly: The compute node has completed initialization and is waiting for a power-on command.
- Lit continuously: The compute node has power and is turned on.

**Note:** The enhanced service processor can take as long as 3 minutes to initialize after you install the compute node, at which point the LED begins to flash slowly.

2. **Location LED:** When this blue LED is lit, it has been turned on by the system administrator to aid in visually locating the compute node. The location LED can be turned off through the management console.
3. **Check log LED:** When this amber LED is lit, it indicates that an error for the compute node has been detected that must be addressed by the user. See the error log repository to further investigate this serviceable event. The LED can be turned off through the management console.

4. **Enclosure fault LED:** When this amber LED is lit, it indicates that a system error has occurred in the compute node. The compute-node error LED will turn off after one of the following events:
  - Correcting the error
  - Reseating the compute node in the IBM Flex System Enterprise Chassis
  - Cycling the IBM Flex System Enterprise Chassis power

**Related tasks:**

“Viewing the light path diagnostic LEDs” on page 447

After reading the required safety information, look at the control panel to determine whether the LEDs indicate a suboptimal condition or an error.

---

## Turning on the compute node

After you connect the compute node to power through the IBM Flex System Enterprise Chassis, you can start the compute node after the discovery and initialization process is complete.

### About this task

To start the compute node, use one of the following methods:

### Procedure

- Start the compute node by pressing the power-control button on the front of the compute node.

After you push the power-control button, the power-on LED continues to flash slowly for about 15 seconds, and then is lit solidly when the power-on process is complete.

Wait until the power-on LED on the compute node flashes slowly before you press the compute node power-control button. If the power-on LED is flashing rapidly, the service processor is initializing the compute node. The power-control button does not respond during initialization.

**Note:** The enhanced service processor can take as long as 3 minutes to initialize after you install the compute node, at which point the LED begins to flash slowly.

- Start the compute node automatically when power is restored after a power failure.

If a power failure occurs, the IBM Flex System Enterprise Chassis and then the compute node can start automatically when power is restored. You must configure the compute node to restart through the management module.

- Start the compute node remotely using the management module.

After you initiate the power-on process, the power-on LED flashes slowly for about 15 seconds, and then is lit solidly when the power-on process is complete.

---

## Turning off the compute node

When you turn off the compute node, it is still connected to power through the IBM Flex System Enterprise Chassis. The compute node can respond to requests from the service processor, such as a remote request to turn on the compute node. To remove all power from the compute node, you must remove it from the IBM Flex System Enterprise Chassis.

### Before you begin

Shut down the operating system before you turn off the compute node. See the operating-system documentation for information about shutting down the operating system.

### About this task

To turn off the compute node, use one of the following methods:

#### Procedure

- Turn off the compute node by pressing the power-control button for at least 5 seconds.

**Note:** The power-control LED can remain on solidly for up to 1 minute after you push the power-control button. After you turn off the compute node, wait until the power-control LED is flashing slowly before you press the power-control button to turn on the compute node again.

If the operating system stops functioning, press and hold the power-control button for more than 5 seconds to force the compute node to turn off.

- Use the management module to turn off the compute node.

The power-control LED can remain on solidly for up to 1 minute after you initiate the power-off process. After you turn off the compute node, wait until the power-control LED is flashing slowly before you initiate the power-on process from the Chassis Management Module (CMM) to turn on the compute node again.

Use the management-module Web interface to configure the management module to turn off the compute node if the system is not operating correctly.

For additional information, see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm\\_product\\_page.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm_product_page.html).

---

## System-board layouts

Illustrations show the connectors and LEDs on the system board. The illustrations might differ slightly from your hardware.

## System-board connectors

Compute node components attach to the connectors on the system board.

The following figure shows the connectors on the base-unit system board in the IBM Flex System p24L Compute Node.

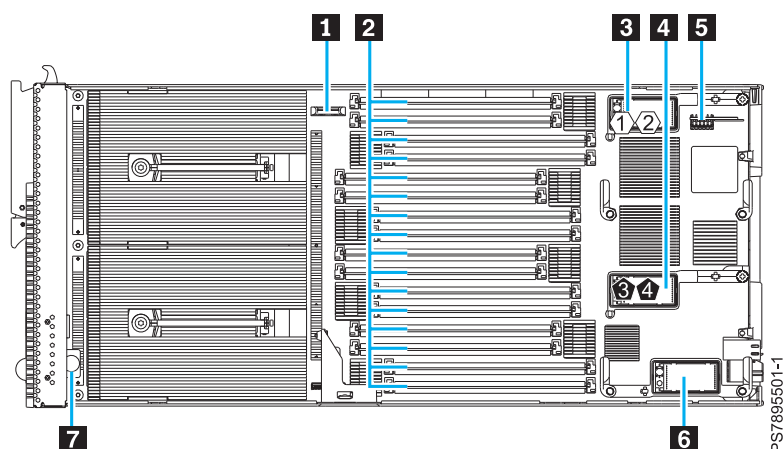


Figure 2. System-board connectors for the IBM Flex System p24L Compute Node

The following table identifies and describes the connectors for the IBM Flex System p24L Compute Node.

Table 2. Connectors for the IBM Flex System p24L Compute Node

Callout	IBM Flex System p24L Compute Node connectors
<b>1</b>	3 V lithium battery connector (P1-E1)
<b>2</b>	DIMM connectors (See Figure 3 on page 13 for individual connectors.)
<b>3</b>	I/O expansion card top connector for chassis bays 1 and 2 (P1-C18)
<b>4</b>	I/O expansion card bottom connector for chassis bays 3 and 4 (P1-C19)
<b>5</b>	Management card connector (P1-C21)
<b>6</b>	Everything-to-Everywhere (ETE) connector (P1-C20)
<b>7</b>	Light path card

The following figure shows individual DIMM connectors for the IBM Flex System p24L Compute Node system board.



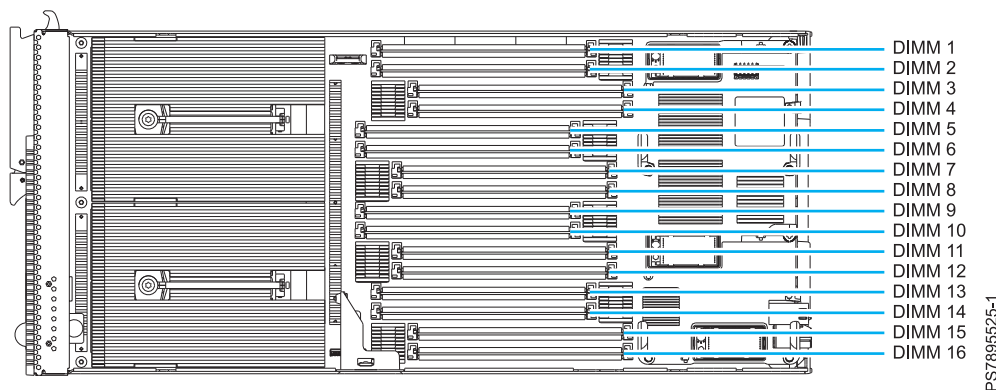


Figure 3. DIMM connectors for the IBM Flex System p24L Compute Node

## System-board LEDs

Use the illustration of the LEDs on the system board to identify a light emitting diode (LED).

Press and hold the front power-control button to see any light path diagnostic LEDs that were turned on during error processing. Use the following figure to identify the failing component.

The following figure shows LEDs on the IBM Flex System p24L Compute Node. The following figures and table shows the system-board LEDs.

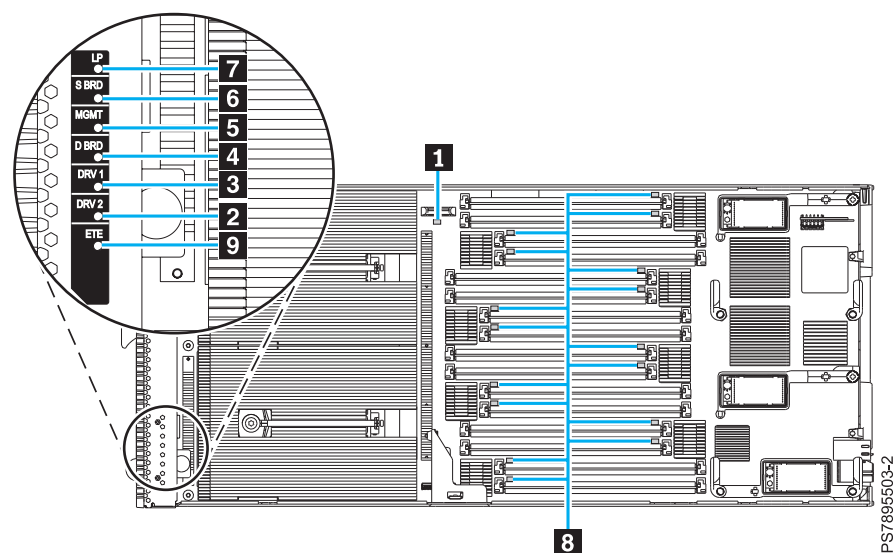


Figure 4. LED locations on the system board of the IBM Flex System p24L Compute Node

The following table identifies the light path diagnostic LEDs.

Table 3. IBM Flex System p24L Compute Node LEDs

Callout	Unit LEDs
<b>1</b>	3 V lithium battery LED
<b>2</b>	DRV2 LED (HDD or SSD)
<b>3</b>	DRV1 LED (HDD or SSD)
<b>4</b>	Drive board LED (solid-state drive interposer, which is integrated in the cover)
<b>5</b>	Management card LED

Table 3. IBM Flex System p24L Compute Node LEDs (continued)

Callout	Unit LEDs
<b>6</b>	System board LED
<b>7</b>	Light path power LED
<b>8</b>	DIMM LEDs
<b>9</b>	ETE connector LED

## Input/output connectors and devices

The input/output connectors that are available to the compute node are supplied by the IBM Flex System Enterprise Chassis.

See the documentation that comes with the IBM Flex System Enterprise Chassis for information about the input/output connectors.

The Ethernet controllers on the compute node communicate with the network through the Ethernet-compatible I/O modules on the IBM Flex System Enterprise Chassis.

---

## Chapter 3. Configuring the compute node

While the firmware is running Power on System Test (POST) and before the operating system starts, a POST menu with POST indicators is displayed. The POST indicators are the words *Memory*, *Keyboard*, *Network*, *SCSI*, and *Speaker* that are displayed as each component is tested. You can then select configuration utilities from the POST menu.

### About this task

The following configuration utilities are available from the POST menu:

- **System management services (SMS)**

Use the system management services (SMS) utility to view information about your system or partition and to perform tasks such as setting up remote IPL, changing self-configuring SCSI device (SCSD) settings, and selecting boot options. The SMS utility can be used for Linux partitions.

- **Default boot list**

Use this utility to initiate a system boot in service mode through the default service mode boot list. This mode attempts to boot from the first device of each type that is found in the list.

- **Open firmware prompt**

This utility is for advanced users of the IEEE 1275 specifications only.

- **Management module**

Use the management module to change the boot list to determine which firmware image to boot, and to perform other configuration tasks.

### Related tasks:

“Using the SMS utility” on page 18

Use the System Management Services (SMS) utility to configure the IBM Flex System p24L Compute Node.

---

## Updating the firmware

IBM periodically makes firmware updates available for you to install on the compute node, on the management module, or on expansion cards in the compute node.

### Before you begin

**Attention:** Installing the wrong firmware update might cause the compute node to malfunction. Before you install a firmware update, read any readme and change history files that are provided with the downloaded update. These files contain important information about the update and the procedure for installing the update, including any special procedure for updating from an early firmware version to the latest version.

### Important:

- To avoid problems and to maintain proper system performance, always verify that the compute node BIOS, service processor, and diagnostic firmware levels are consistent for all compute nodes within the IBM Flex System Enterprise Chassis.
- For a detailed summary of update procedures for all IBM Flex System components, see the <http://www.ibm.com/support/entry/portal/docdisplay?lnid=MIGR-5091991>.

To update the firmware of the compute node, use one of the following methods.

- The IBM Flex System Manager. See [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/updating\\_firmware\\_and\\_software.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/updating_firmware_and_software.html).
- The Hardware Management Console (HMC). See Managed system updates.
- The Integrated Virtualization Manager (IVM), see Updating the Integrated Virtualization Manager.
- In-band operating system capabilities. These include the **update\_flash** command for the Linux operating system or the **ldfware** command for Virtual I/O Server.
- The firmware update function of the stand-alone *diagnostics boot image*.

**Attention:** Before the installation of the new firmware to the temporary side begins, the contents of the temporary side are copied into the permanent side. After the firmware installation begins, the previous level of firmware on the permanent side is no longer available.

#### Notes:

- You must use the default USERID account and password in the management software to access a Chassis Management Module (CMM) that is managing a chassis that contains Power Systems™ compute nodes.
- Before you update the firmware for one or more Power Systems compute nodes, make sure that the password for the default USERID account will not expire before the update is complete. If the password expires during a code update, then the Power Systems compute nodes might not reconnect to the management software, and each Power Systems compute node might have to be updated with the new password.
- Firmware updates can take some time to load. To expedite the initial setup process, you can begin to install your operating system while you wait for the firmware updates.

## About this task

To install compute node firmware using an in-band method, complete the following steps:

## Procedure

1. Download the IBM Flex System p24L Compute Node firmware.
  - a. Go to <http://www.ibm.com/software/brandcatalog/puresystems/centre/update>.
  - b. Select the update group that matches the IBM Flex System version to which you want to update. For example, select the Flex System 1.2.1 tab.
  - c. Select the updates for the applicable compute node.
  - d. Download the compute node firmware and any firmware required for installed devices, such as adapters or drives.

**Note:** Ensure that you download all files in the firmware update, including .rpm, .xml, dd.xml, and pd.sdd files as well as the readme.txt file.

- e. Use FTP to copy the update to a directory on the compute node (such as /tmp/fwrpms).
2. Log on to the Linux system as root, or log on to the Virtual I/O Server (VIOS) as padmin.
  3. If you are logging on to VIOS, run the following command to obtain root access:  

```
run oem_setup_env
```

4. Unpack the .rpm file.

For example, if you are installing the FW773 service pack 01AF773\_051\_033:

```
rpm -Uvh -ignoreos 01AF773_051_033.rpm
```

The output from the command should be similar to:

```
Preparing... ##### [100%]
1:01AF773_051_033 ##### [100%]
```

The resulting .img file is now in the /tmp/fwupdate subdirectory.

5. Install the firmware update with one of the following methods:

- Install the firmware with the Linux **update\_flash** command:

```
cd /tmp/fwupdate
/usr/sbin/update_flash -f 01AFxxx_yyy_zzz.img
```

- Return to VIOS and install the firmware with the **ldfware** command on VIOS:

```
#exit
cd /tmp/fwupdate
ldfware -file 01AFxxx_yyy_zzz.img
```

Where *01AFxxx\_yyy\_zzz.img* is the name of the firmware image.

**Note:** You can also use the firmware update function of AIX diagnostics or the firmware update function of the stand-alone diagnostics boot image. For more information, see [http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ha5/fix\\_aix\\_diags.htm](http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ha5/fix_aix_diags.htm).

6. Restart the compute node to apply the firmware update.
7. Run the following command in AIX or Linux to verify if the firmware update was successful:

```
lsmcode -A
```

Run the following command in VIOS to verify if the firmware update was successful:

```
lsfware -all
```

## Starting the TEMP image

The system firmware is contained in separate temporary and permanent images in the flash memory of the compute node. These images are referred to as TEMP and PERM, respectively. The compute node normally starts from the TEMP image. Start the TEMP image before you update the firmware.

### About this task

To start the TEMP image, see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_power\\_firmware.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_power_firmware.html).

## Verifying the system firmware levels

The diagnostics program displays the current system firmware levels for the temporary (TEMP) and permanent (PERM) images. This function also displays which image the compute node used to start.

### Procedure

1. Start the diagnostics program.

2. From the **Function Selection** menu, select **Task Selection** and press Enter.
3. From the **Tasks Selection List** menu, select **Update and Manage System Flash** and press Enter.  
The top of the **Update and Manage System Flash** menu displays the system firmware level for the PERM and the TEMP images and the image that the compute node used to start.

**Note:** If the TEMP image level is more current than the PERM image, commit the TEMP image.

4. When you have verified the firmware levels, press F3 until the Diagnostic Operating Instructions window is displayed, and then press F3 again to exit the diagnostic program.

---

## Using the SMS utility

Use the System Management Services (SMS) utility to configure the IBM Flex System p24L Compute Node.

### Starting the SMS utility

Start the SMS utility to configure the compute node.

#### Procedure

1. Turn on or restart the compute node, and establish an SOL session with it.  
See the *IBM Chassis Management Module Command-Line Interface Reference Guide* for more information.
2. When the POST menu and indicators are displayed, and after the word Keyboard is displayed and before the word Speaker is displayed, press 1.
3. Follow the instructions in the window.

### SMS utility menu choices

Select SMS tasks from the SMS utility main menu. Choices on the SMS utility main menu depend on the version of the firmware in the compute node.

Some menu choices might differ slightly from these descriptions:

- **Select Language**  
Changes the language that is used to display the SMS menus.
- **Setup Remote IPL (Initial Program Load)**  
Enables and sets up the remote startup capability of the compute node or partition.
- **Change SCSI Settings**  
Changes the addresses of the self-configuring SCSI device (SCSD) controllers that are attached to the compute node.
- **Select Console**  
Selects the console on which the SMS menus are displayed.
- **Select Boot Options**  
Sets various options regarding the installation devices and boot devices.

**Note:** If a device that you are trying to select is not displayed in the **Select Device Type** menu, select **List all Devices** and select the device from that menu.

- **Firmware Boot Side Options**  
Controls the booting of firmware from the permanent or temporary side.

---

## Configuring processor cores

Learn how to increase or decrease the number of active processor cores in the compute node.

You can order your IBM Flex System p24L Compute Node with a feature that instructs the factory to reduce the number of active processor cores in the compute node to reduce software licensing costs. The factory uses the field core override option to reduce the number of processor cores when *feature code 2319: Factory deconfiguration of one core* is ordered with a new system. This option, available on the Advanced System Management Interface (ASMI), reduces the number of processor cores by one.

The field core override option indicates the number of functional cores that are active in the compute node. The field core override option provides the capability to increase or decrease the number of active processor cores in the compute node. The compute node firmware sets the number of active processor cores to the entered value. The value takes effect when the compute node is rebooted. The field core override value can be changed only when the compute node is powered off.

You must use this option to increase the number of active processor cores due to increased workload on the compute node.

To change the number of functional override cores in the compute node, you must access ASMI. See [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_launch\\_asm.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_launch_asm.html).

For detailed information about the field core override feature, see <http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7hby/fieldcore.htm>.

### Related information:

 <http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7hby/viewproconfig.htm>

---

## MAC addresses for integrated Ethernet controllers

Two integrated Ethernet ports are used by the service processor on the IBM Flex System p24L Compute Node. Additional Ethernet ports are provided by the feature cards plugged into the two expansion cards slots. These expansion card Ethernet ports, when used with a Virtual I/O Server (VIOS), provide virtual *logical Ethernet* to client logical partitions (LPARs). The VIOS software uses the logical Ethernet as if they were actual physical ports.

### About this task

The Media Access Control (MAC) addresses of the integrated Ethernet ports are listed on a label on the compute node. The compute node label lists two MAC addresses. The MAC addresses of the integrated Ethernet ports are displayed in the Chassis Manager in the management software web interface of the IBM Flex System Manager and in the Hardware Management Console (HMC), and in the Integrated Virtualization Manager (IVM). The MAC addresses of the logical ports are generated by VIOS.

To view the MAC addresses of the Ethernet ports by using HMC, click **HMC Management > Change Network Settings > LAN Adapters**.

To view the MAC addresses of the Ethernet ports by using IVM, click **View/Modify TCP/IP Settings > Properties > Connected Partitions**.

Table 4 on page 20 shows the relative addressing scheme.

Table 4. MAC addressing scheme for physical and logical integrated Ethernet controllers

Node	Name in management module	Relationship to the MAC that is listed on the IBM Flex System p24L Compute Node label	Example
Service processor built-in Enet0		Same as first MAC address	00:1A:64:44:0e:c4
Service processor built-in Enet1		MAC + 1	00:1A:64:44:0e:c5
Logical Ethernet ports		Generated by VIOS	

1. The Integrated Virtualization Manager (IVM), see Updating the Integrated Virtualization Manager.

For more information about planning, deploying, and managing the use of integrated Ethernet controllers, see the Configuring section of the PowerVM Information Roadmap.



---

## Chapter 4. Installing the operating system

Before you install the operating system on the compute node, verify that the compute node is installed in the IBM Flex System Enterprise Chassis, that the management-module firmware is at the latest available level, and that the compute node is turned on.

### About this task

If you are not using an unattended network-installation method to install your operating system, you must first provide a serial over LAN (SOL) connection to the compute node to install your operating system. For information about starting an SOL session, see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/dw1kt\\_cmm\\_cli\\_book.pdf](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/dw1kt_cmm_cli_book.pdf).

#### Important:

- After you install the operating system on the compute node, you must install any service packs or update packages that come with the operating system. For additional information, see the instructions that come with your operating-system documentation and the service packs or update packages.
- If you plan to install an Ethernet I/O expansion card, first install the operating system so that the onboard ports can be recognized and configured before the ports on the I/O expansion card. If you install the Ethernet I/O expansion card *before* you install the operating system, the I/O expansion card ports will be assigned before the onboard ports.

See the ServerProven website for information about supported operating-system versions and all compute node optional devices.

---

### Locating the installation instructions

You can order the IBM Flex System p24L Compute Node with Virtual I/O Server (VIOS) or Linux already installed. If you did not order your compute node with these operating systems installed, you can install them as a local operating system. After installing VIOS, you can install the Linux operating system as a client operating system in a logical partition (LPAR).

### About this task

After you configure the compute node hardware, go to the operating-system documentation for the latest operating-system installation instructions. See the following operating system descriptions for more information:

- **Installing Virtual I/O Server**

See the Installing section of the *PowerVM Information Roadmap*.

If you did not order your servers with the VIOS software installed, you can use the *Virtual I/O Server* DVD in the product package to install VIOS and set up a virtual environment that supports client operating systems in logical partitions. You can then install any of the supported operating systems as a client in an LPAR.

If you ordered the IBM Flex System p24L Compute Node, do not use the PowerVM Information road map. Instead, go to [http://publib.boulder.ibm.com/infocenter/lxinfo/v3r0m0/topic/liabd/install\\_ivm.htm](http://publib.boulder.ibm.com/infocenter/lxinfo/v3r0m0/topic/liabd/install_ivm.htm) in the Linux Information Center. This roadmap provides instructions that are specific to the IBM Flex System p24L Compute Node for configuring IVM, configuring client logical partitions, installing Linux, and configuring the IBM open source workloads.

The order of installation of VIOS and the operating systems is important. You can update the firmware first with the stand-alone *Diagnostics* CD, but you must install the VIOS software before you install any

other software. The VIOS software creates the *Integrated Virtual Manager* administrator console and the first logical partition, which VIOS and Integrated Virtual Manager (IVM) occupy.

After you install VIOS, you can use the IVM and Micro-Partitioning® features to create client partitions for client operating systems.

- **Installing Linux**

You can install a Linux operating system by following the installation instructions in the IBM Systems Information Center.

The online Linux installation instructions are available in the *Linux on BladeCenter JS22* topic in the IBM Systems Information Center.

If you ordered the IBM Flex System p24L Compute Node, do not use the information in the IBM Systems Information Center. Instead, go to [http://publib.boulder.ibm.com/infocenter/lxinfo/v3r0m0/topic/liabd/install\\_ivm.htm](http://publib.boulder.ibm.com/infocenter/lxinfo/v3r0m0/topic/liabd/install_ivm.htm) in the Linux Information Center. This road map provides instructions that are specific to the B2S for installing Linux and configuring the IBM open source workloads.

**Notes:**

1. Some optional devices have device drivers that you must install. See the documentation that comes with the devices for information about installing any required device drivers.  
If your operating system does not have the required device drivers, contact your IBM marketing representative or authorized reseller, or see your operating-system documentation for additional information.
2. The IBM Remote Deployment Manager (RDM) program does not support the IBM Flex System p24L Compute Node. However, you can use the following programs for remote deployment:
  - For Red Hat Linux or SUSE Linux operating-system deployments, you can use Cluster Systems Management (CSM) from IBM. Go to <http://www.ibm.com/systems/clusters/index.html>.
  - For SUSE Linux operating-system deployments, you can use the AutoYast utility program from Novell, Inc. Go to <http://www.suse.com/~ug/>.

## **Results**

After you install the operating system, install operating system updates, and then install any utilities that apply to your operating system.

---

## **Installing service and productivity tools for Linux**

Linux service and productivity tools include hardware diagnostic aids and productivity tools, and installation aids. The installation aids are provided in the IBM Installation Toolkit for the Linux operating system, a set of tools that aids the installation of the Linux operating system on IBM compute nodes that are based on IBM POWER7 Architecture technologies. You can also use the tools to update the IBM Flex System p24L Compute Node firmware.

## About this task

The hardware diagnostic aids and productivity tools are available as downloadable Red Hat Package Manager (RPM) files for Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES). The IBM Installation Toolkit for Linux is available as an ISO compact disc (CD) image, which you can use to create your own CD. The Service and productivity tools for Linux systems site describes how to create a CD.

The hardware diagnostic aids and productivity tools are required for such hardware reliability, availability, and serviceability (RAS) functions as first-failure data-capture and error-log analysis. With the tools installed, problem determination and correction are greatly enhanced and the likelihood of an extended system outage is reduced.

For example, the **update\_flash** command for installing system firmware updates can be performed only if the hardware diagnostic aids and productivity tools are installed.

Other tools modify various serviceability policies, manipulate system LEDs, update the bootlist, and capture extended error data to aid analysis of intermittent errors.

Other commands and a boot-time scanning script constitute a hardware inventory system. The **lsvpd** command provides vital product data (VPD) about hardware components.

The Error Log Analysis (ELA) tool provides automatic analysis and notification of errors that are reported by the platform firmware. ELA writes analyzed error data to `/var/log/platform` and to the service log. If a corrective action is required, a notification event sends the event to registered tools and subscribed users.

Install the Linux operating system before you download and install the hardware diagnostic aids and productivity tools for Linux. The Installation Toolkit for Power Systems servers running Linux is provided as-is only. You are not entitled to IBM Software Support for the Installation Toolkit.

Install the Virtual I/O Server and the Integrated Virtualization Manager before you install your Linux operating system if you plan to have a virtual environment.



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## Chapter 5. Accessing the service processor

You can access the service processor remotely.

The management console can connect directly to the Advanced System Management Interface (ASMI) for a selected system. ASM is an interface to the service processor that you can use to manage the operation of the host, such as the automatic power restart function, and to view information about the host, such as the error log and vital product data.

To access the ASMI by using the IBM Flex System Manager, see *Launching Advanced System Management* ([http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_launch\\_asm.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_launch_asm.html)).

To access the ASMI by using the Hardware Management Console (HMC), see *Accessing the ASMI using the HMC* (<http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hby/asmihmc.htm>).

To access the ASMI by using a web browser, complete the following steps:

1. Assign an IP address to the service processor of the compute node. Perform the following steps:
  - a. Access the Chassis Management Module (CMM) web interface. For instructions, see *Ethernet connection* ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote\\_console\\_ethernet\\_connect\\_cmm.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote_console_ethernet_connect_cmm.html)).
  - b. From the menu bar, click **Chassis Management**. Then, in the drop-down menu click **Component IP Configuration**. From the **Device Name** list, select the compute node name to access property tabs for the compute node. On the IPv4 property tab set the static IP address, mask, and gateway. For more information about setting the IP configuration of a compute node, see *Chassis management options* ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm\\_ui\\_chassis\\_management.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm_ui_chassis_management.html)).
2. Open a web browser on the client computer. Type **https://xxx.xxx.xxx.xxx**, where *xxx.xxx.xxx.xxx* is the IP address of the compute node service processor.



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## Chapter 6. Installing and removing components

Install or remove hardware components, such as memory modules or input/output expansion cards. Some installation procedures require you to remove an installed component.

---

### Returning a device or component

If you are instructed to return a device or component, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

---

### Installation guidelines

Follow these guidelines to remove and replace compute node components.

- Read the safety information in the Safety topic and the guidelines in “Handling static-sensitive devices” on page 28. This information will help you work safely.
- When you install a new compute node, download and apply the most recent firmware updates. Download and install updated device drivers and the compute node firmware. Go to the IBM Support site to download the updates. Select your product, type, model, and operating system, and then click **Go**. Click the **Download** tab, if necessary, for device driver and firmware updates.

**Note:** Changes are made periodically to the IBM website. Procedures for locating firmware and documentation might vary slightly from what is described in this documentation.

- Observe good housekeeping in the area where you are working. Place removed covers and other parts in a safe place.
- Back up all important data before you make changes to disk drives.
- Before you remove a hot-swap compute node from the IBM Flex System Enterprise Chassis, you must shut down the operating system and turn off the compute node. You do not have to shut down the IBM Flex System Enterprise Chassis itself.
- Blue on a component indicates touchpoints, where you can grip the component to remove it from or install it in the compute node, open or close a latch, and so on.
- Orange on a component or an orange label on or near a component indicates that the component can be hot-swapped, which means that if the compute node and operating system support hot-swap capability, you can remove or install the component while the compute node is running. (Orange can also indicate touchpoints on hot-swap components.) See the instructions for removing or installing a specific hot-swap component for any additional procedures that you might have to perform before you remove or install the component.
- When you are finished working on the compute node, reinstall all safety shields, guards, labels, and ground wires.

See the ServerProven website for information about supported operating-system versions and all compute node optional devices.

## System reliability guidelines

Follow these guidelines to help ensure proper cooling and system reliability.

- Verify that the ventilation holes on the compute node are not blocked.
- Verify that you are maintaining proper system cooling in the unit.

Do not operate the IBM Flex System Enterprise Chassis without a compute node, expansion unit, or filler node installed in each bay. See the documentation for your IBM Flex System Enterprise Chassis for additional information.

- Verify that you have followed the reliability guidelines for the IBM Flex System Enterprise Chassis.
- Verify that the compute node battery is operational. If the battery becomes defective, replace it immediately, as described in “Removing the battery” on page 51 and “Installing the battery” on page 52.

## Handling static-sensitive devices

Static electricity can damage the compute node and other electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.

### About this task

#### Attention:

To reduce the possibility of damage from electrostatic discharge, observe the following precautions:

- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed circuitry.
- Do not leave the device where others can handle and damage it.
- While the device is still in its static-protective package, touch it to an unpainted metal part of the IBM Flex System Enterprise Chassis or any unpainted metal surface on any other grounded rack component in the rack that you are installing the device in for at least 2 seconds. This drains static electricity from the package and from your body.
- Remove the device from its package and install it directly into the compute node without setting down the device. If it is necessary to set down the device, put it back into its static-protective package. Do not place the device on the compute node cover or on a metal surface.
- Take additional care when handling devices during cold weather. Heating dry winter air further reduces its humidity and increases static electricity.



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## Removing the compute node from an IBM Flex System Enterprise Chassis

Remove the compute node from the IBM Flex System Enterprise Chassis to access options, connectors, and system-board indicators.

### About this task

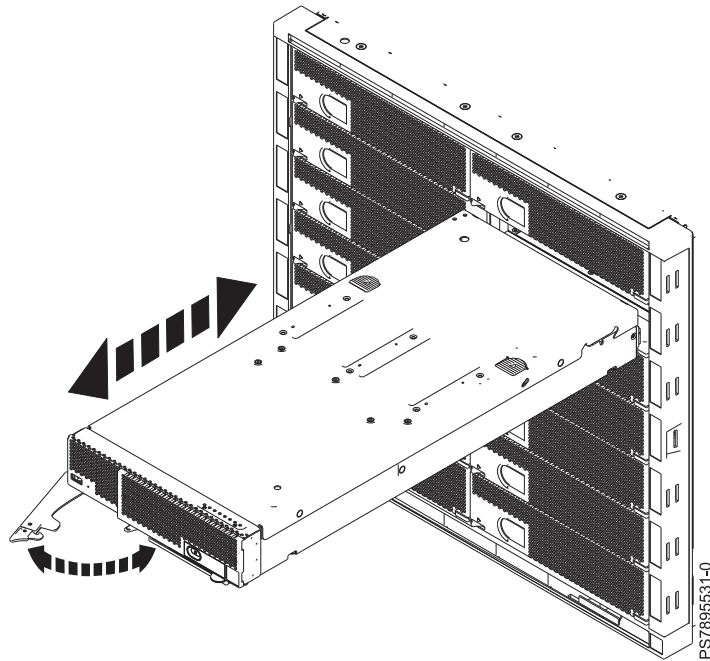


Figure 5. Removing the compute node from the IBM Flex System Enterprise Chassis

#### Attention:

- To maintain proper system cooling, do not operate the IBM Flex System Enterprise Chassis without a compute node, expansion unit, or compute node filler installed in each bay.
- When you remove the compute node, note the bay number. Reinstalling a compute node into a different bay from the one where it was removed might have unintended consequences. Some configuration information and update options are established according to bay numbers. If you reinstall the compute node into a different bay, you might have to reconfigure the compute node.

To remove the compute node, complete the following steps:

#### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. If the compute node is operating, shut down the operating system. See “Locating the installation instructions” on page 21 for information about locating the operating system documentation for your compute node.

3. Press the power-control button to turn off the compute node. See “Turning off the compute node” on page 11.
4. Wait at least 30 seconds for the hard disk drive to stop spinning.
5. Open the release handles, as shown in Figure 5 on page 29. There is one release handle. The compute node can be moved out of the bay approximately 0.6 cm (0.25 inch).
6. Pull the compute node out of the bay.
7. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
8. Place either a compute node filler or another compute node in the bay.

---

## Reseating the compute node in a chassis

Reseat the compute node.

### About this task

To reseat the compute node, complete the following steps:

### Procedure

1. Perform a virtual reseat of the compute node.  
To perform a virtual reseat by using the IBM Chassis Management Module (CMM), go to [http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/unmanaging\\_chassis.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/unmanaging_chassis.html).  
To perform a virtual reseat by using the IBM Flex System Manager (FSM), go to [http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/unmanaging\\_chassis.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/unmanaging_chassis.html).
2. Is the problem resolved?  
**Yes:** This ends the procedure.  
**No:** Continue with the next step.
3. Remove and replace the compute node into the IBM Flex System Enterprise Chassis.
  - a. Remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
  - b. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.

---

## Removing and replacing tier 1 CRUs

Replacement of tier 1 customer-replaceable units (CRUs) is your responsibility.

## About this task

If IBM installs a tier 1 CRU at your request, you will be charged for the installation.

The illustrations in this documentation might differ slightly from your hardware.

## Removing the compute node cover

Remove the compute node from the chassis unit and press the compute node cover releases to open and remove the compute node cover.

## About this task

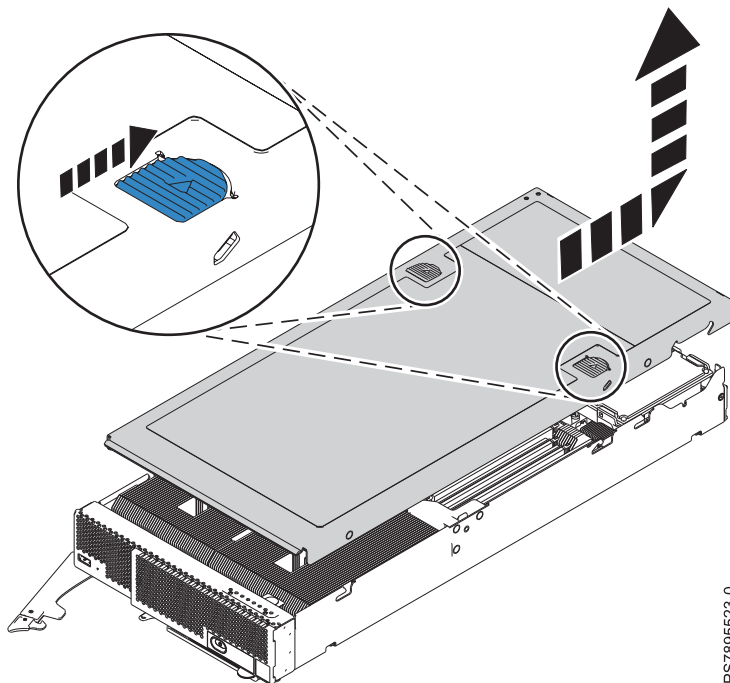


Figure 6. Removing the cover from an IBM Flex System p24L Compute Node

To remove the compute node cover, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.

3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Facing the unit, unlatch the cover by pressing the right cover release (as shown in the preceding figures) on the compute node.
5. Press the right cover release while gripping the left cover release, slide the cover to the back of the unit, and lift the cover open.
6. To protect the disk drives, which are on the inside of the cover, flip the cover over and lay it on a flat, static-protective surface, with the cover side down.

**Statement 12**



**CAUTION:**

The following label indicates a hot surface nearby.



**Statement 21**



**CAUTION:**

Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.

## **Installing and closing the compute node cover**

Install and close the cover of the compute node before you insert the compute node into the IBM Flex System Enterprise Chassis. Do not attempt to override this important protection.

### **About this task**

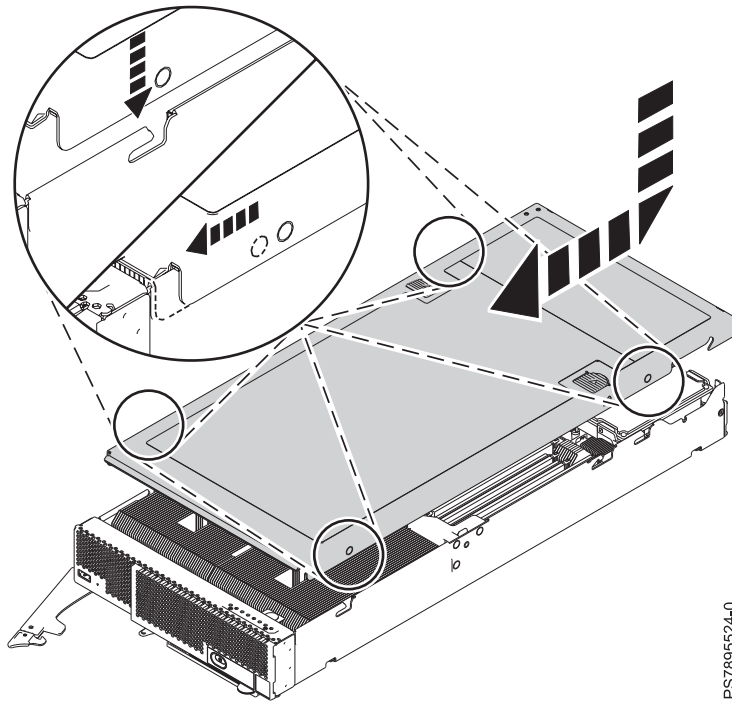


Figure 7. Installing the cover for an IBM Flex System p24L Compute Node

#### Statement 21



#### CAUTION:

Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.

To replace and close the compute node cover, complete the following steps:

#### Procedure

1. Read the Safety topic and the "Installation guidelines" on page 27.
2. Lower the cover so that the pins on the sides of the cover slide down into the slots (as shown in the preceding figures) at the front and rear of the compute node. Before you close the cover, verify that all components are installed and seated correctly and that you have not left loose tools or parts inside the compute node.
3. Slide the cover forward to the closed position until the releases click into place in the cover.

4. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.

## Removing the bezel assembly

If a bezel is damaged, you can remove it from a compute node.

### About this task

Removal of the bezel assembly is not required for servicing internal components of your IBM Flex System p24L Compute Node. If the bezel becomes damaged, you can remove the bezel by using the following procedure.

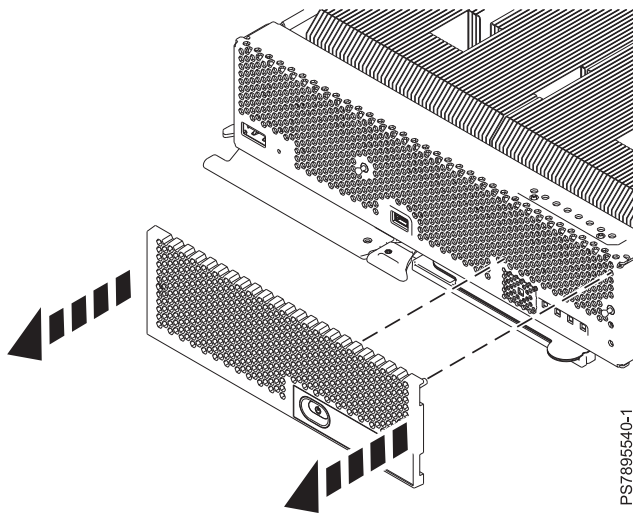


Figure 8. Removing the bezel assembly from an IBM Flex System p24L Compute Node

To remove the compute node bezel, complete the following steps:

### Procedure

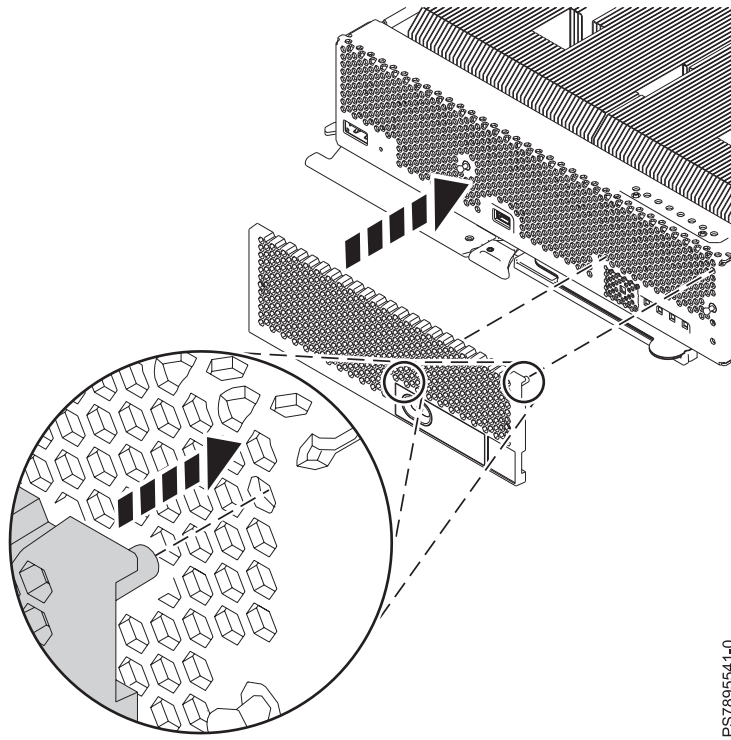
1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Locate the bezel on the right-front side of the compute node. Holding both sides of the bezel assembly, pull the bezel assembly away from the compute node as shown in Figure 8.
5. If you are instructed to return the bezel assembly, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

## Installing the bezel assembly

You can replace a damaged bezel on an IBM Flex System p24L Compute Node.

### About this task

If the bezel becomes damaged, you can install a new bezel by using the following procedure.



*Figure 9. Installing the bezel assembly in an IBM Flex System p24L Compute Node*

To replace a bezel on the compute node, complete the following steps:

### Procedure

1. Align the bezel with the compute node according to the circled locations indicated in Figure 9.
2. Align the bezel assembly with the front of the compute node. Firmly press the bezel at the sides where the two pins protrude from the face of the compute node until the assembly clicks into place.
3. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.

## Removing a SAS hard disk drive

If the serial-attached SCSI (SAS) hard disk drive is damaged or in need of replacing, you can remove it from the compute node.

### About this task

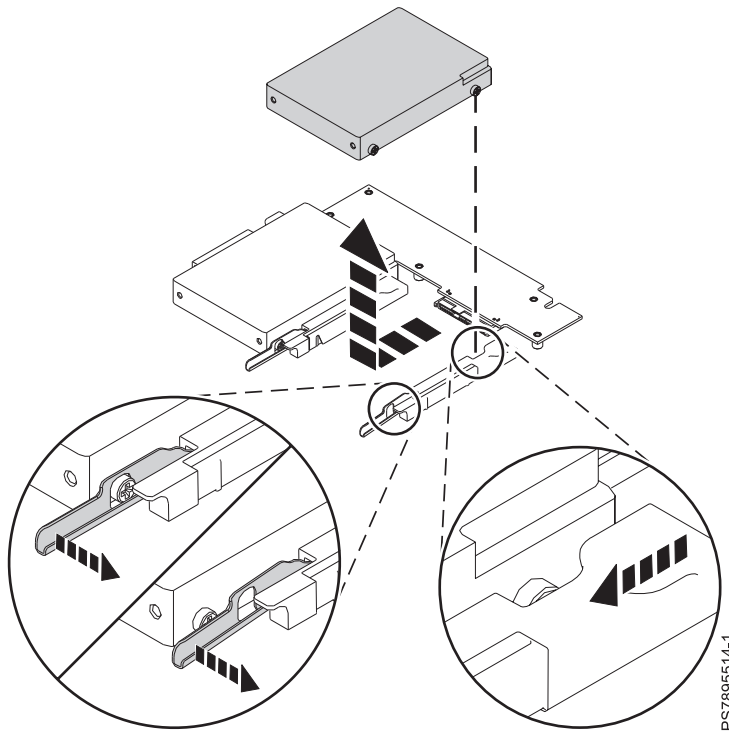


Figure 10. Removing a hard disk drive

To remove the hard disk drive, complete the following steps:

### Procedure

1. Back up the data from the drive to another storage device.
2. Read the Safety topic and the “Installation guidelines” on page 27.
3. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
4. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
5. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
6. Remove the drive, which is on the inside of the cover:

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the hard disk drive that must be replaced. See “System-board LEDs” on page 13.

- a. Move and hold the blue release lever at the front of the drive tray, as indicated in Figure 10.
- b. Slide the drive forward to disengage the connector.
- c. Lift the drive out of the drive tray.



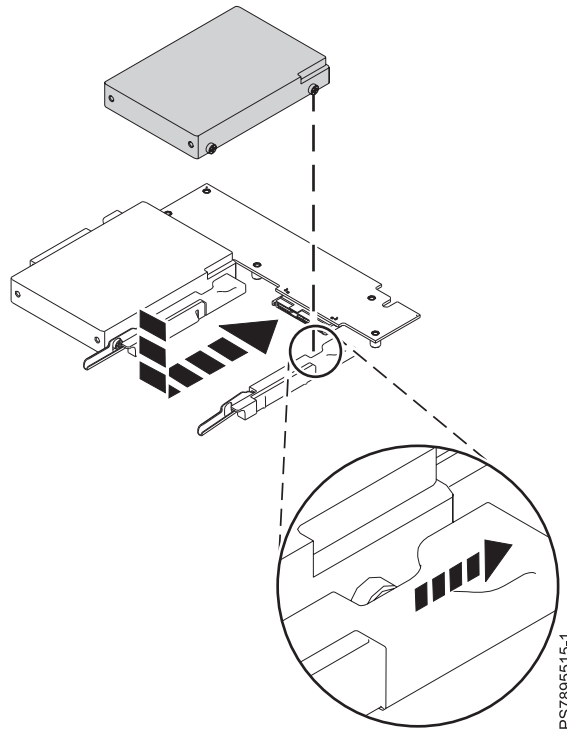
7. If you are instructed to return the hard disk drive, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

## Installing a SAS hard disk drive

If your serial-attached SCSI (SAS) hard disk drive needs replacing, install another SAS hard disk drive in the compute node.

### About this task

Figure 11 shows how to install the hard disk drive.



*Figure 11. Installing a hard disk drive*

All drive connectors are from the same controller.

To install a hard disk drive, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.

3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the connector for the drive on the inside of the cover.
  - If you are replacing a drive, continue to the next step.
  - If you are installing a new drive, remove the filler:
    - a. Move and hold the blue release lever at the front of the drive tray.
    - b. Slide the filler forward and lift it out of the drive tray.
6. Place the drive into the drive tray and push it toward the rear of the compute node, as indicated in Figure 11 on page 37. When the drive moves past the lever at the front of the tray, it snaps in place.

**Attention:** Do not press on the top of the drive. Pressing the top might damage the drive.
7. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

8. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
9. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

## Removing a solid-state drive carrier

If your solid-state drive (SSD) carrier needs to be replaced, you can remove it from the compute node.

### About this task

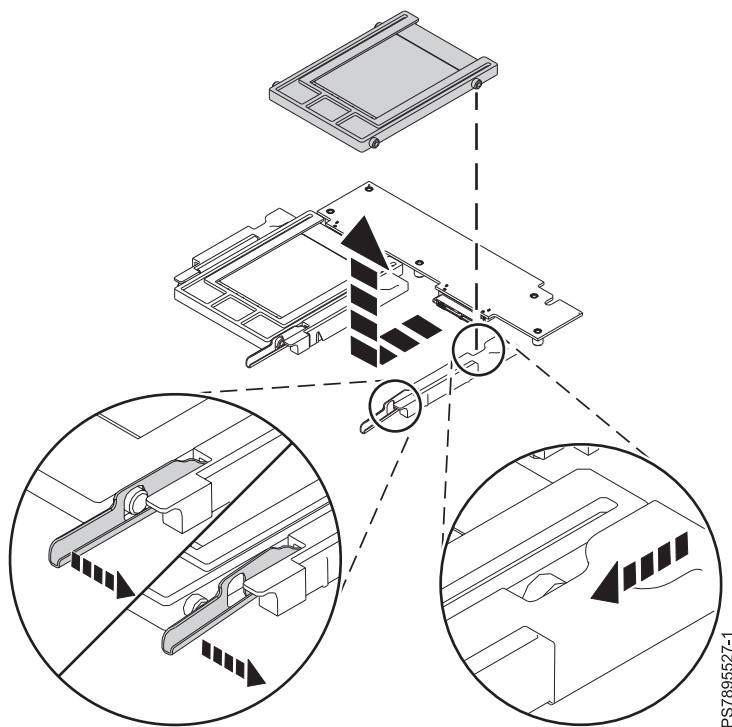


Figure 12. Removing an SSD carrier

To remove the drive, complete the following steps:

### Procedure

1. Back up the data from the drive to another storage device.
2. Read the Safety topic and the “Installation guidelines” on page 27.
3. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
4. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
5. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
6. Remove the drive, which is on the inside of the cover:

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the solid-state drive that must be replaced. See “System-board LEDs” on page 13.

- a. Pull and hold the blue release lever at the front of the drive tray, as indicated in Figure 12.
- b. Slide the carrier case forward to disengage the connector.
- c. Lift the carrier case out of the drive tray.

7. Remove any SSDs from the carrier case. See “Removing a SATA solid-state drive” on page 42.
8. If you are instructed to return the SSD carrier, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

**Note:** Even if you do not plan to install another SSD in the drive slot, replace the SSD carrier in the slot to act as a thermal baffle and to avoid machine damage. See “Installing a solid-state drive carrier.”

## Installing a solid-state drive carrier

If your solid-state drive (SSD) carrier needs to be replaced, you can install another carrier in the compute node.

### About this task

Figure 13 shows how to install the disk drive.

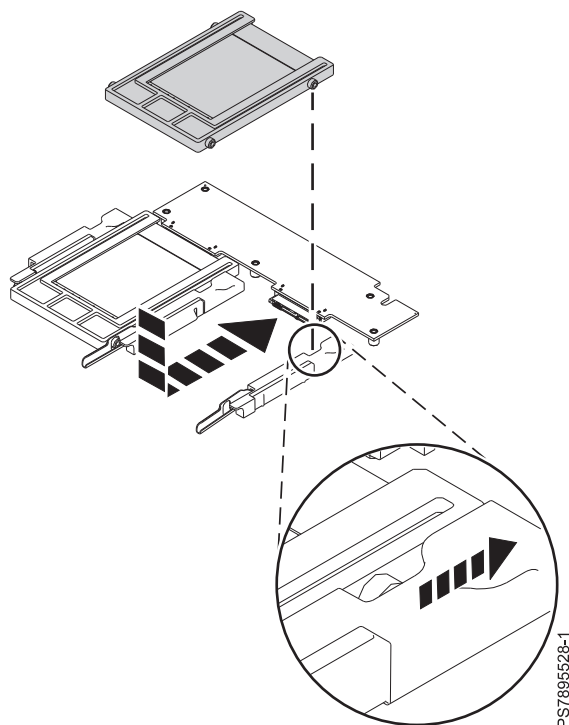


Figure 13. Installing an SSD carrier

To install an SSD carrier, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the connector for the drive.

**Note:** Although the SSD carrier and the HDD are two separately configured cards, the SSD carrier case plugs in to the 2.5 inch SAS HDD connector.

6. If you are replacing an SSD carrier, continue to the next step. If you are installing a new SSD carrier, remove the filler to vacate the space for the new SSD carrier:
  - a. Pull and hold the blue release lever at the front of the drive tray.
  - b. Slide the filler forward to disengage the connector.
  - c. Lift the filler out of the drive tray.
7. Remove the SSD carrier case that you want to replace from the drive tray. See “Removing a solid-state drive carrier” on page 38.
8. Install SSDs into the new carrier case. See “Installing a SATA solid-state drive” on page 43.
9. Place the carrier case into the drive tray and push it toward the rear of the compute node, as indicated in Figure 13 on page 40. When the SSD carrier moves past the lever at the front of the tray, it snaps in place.

**Attention:** Do not press the top of the carrier case. Pressing the top might damage the drive.

10. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

11. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
12. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

## Removing a SATA solid-state drive

If your Serial Advanced Technology Attachment (SATA) solid-state drive (SSD) needs to be replaced, you can remove it from the compute node.

### About this task

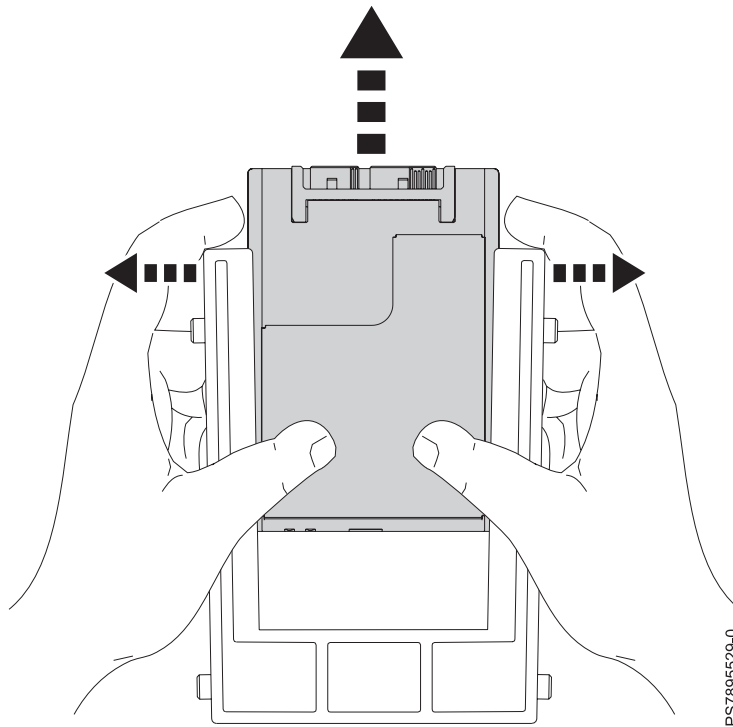


Figure 14. Removing a SATA SSD

To remove the SATA SSD, complete the following steps:

### Procedure

1. Back up the data from the drive to another storage device.
2. Read the Safety topic and the "Installation guidelines" on page 27.
3. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See "Removing the compute node from an IBM Flex System Enterprise Chassis" on page 29.
4. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
5. Open and remove the compute node cover. See "Removing the compute node cover" on page 31.
6. Remove the SSD carrier from the drive tray. See "Removing a solid-state drive carrier" on page 38.

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the solid-state drive that must be replaced. See "System-board LEDs" on page 13.

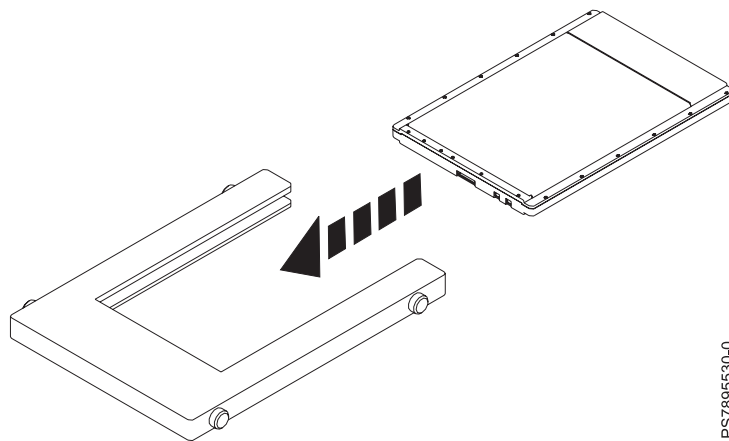
7. Gently spread open the carrier with your fingers while sliding the SSD out of the carrier case with your thumbs.
8. If you are instructed to return the drive, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

## Installing a SATA solid-state drive

You can install a Serial Advanced Technology Attachment (SATA) solid-state drive (SSD) in a compute node.

### About this task

Figure 15 shows how to install the SATA SSD.



PS789530-0

*Figure 15. Installing a SATA SSD*

To install a SATA SSD, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the connector for the drive.
6. Remove the SSD carrier case from the drive tray. See “Removing a solid-state drive carrier” on page 38.
7. Slide the SSD into the carrier case until it snaps in place.

8. Replace the carrier case in the drive tray. See “Installing a solid-state drive carrier” on page 40.  
**Attention:** Do not press the top of the drive. Pressing the top might damage the drive.
9. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

10. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
11. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

## Removing a DIMM

The very low profile (VLP) dual-inline memory module (DIMM) is a tier 1 CRU. You can remove it yourself. If IBM removes a tier 1 CRU at your request, you will be charged for the removal. The low profile (LP) DIMM is a tier 2 CRU. You can remove it yourself or request IBM to remove it, at no additional charge, under the type of warranty service that is designated for the compute node.

### About this task

To remove a DIMM, complete the following steps:

#### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the DIMM connector that contains the DIMM being replaced.

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the DIMM that must be replaced. See “System-board LEDs” on page 13.



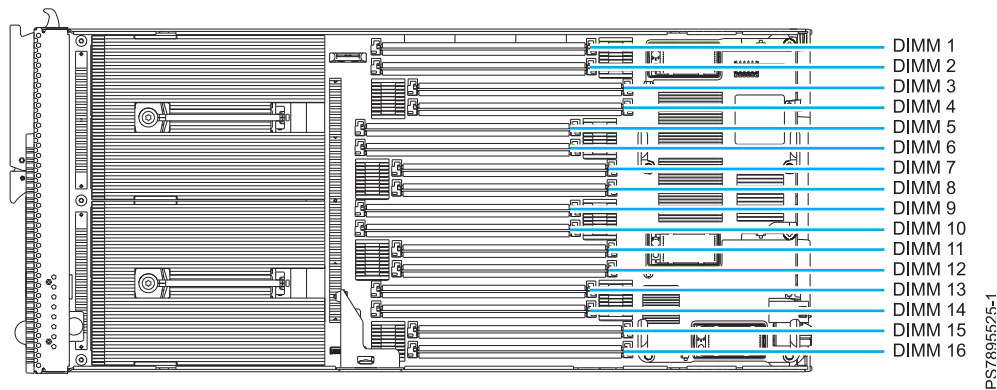


Figure 16. DIMM connectors for the IBM Flex System p24L Compute Node

**Attention:** To avoid breaking the DIMM retaining clips or damaging the DIMM connectors, open and close the clips gently.

6. Carefully open the retaining clips (A) on each end of the DIMM connector by pressing them in the direction of the arrows. Remove the DIMM (B).

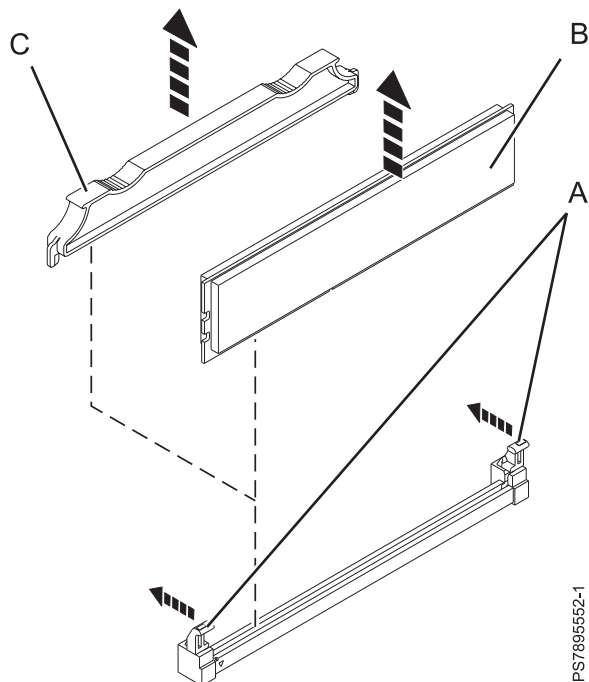


Figure 17. Removing a DIMM

7. Install a DIMM filler (C) in any location where a DIMM is not present to avoid machine damage.

**Note:** Before you replace the compute node cover, ensure that you have at least the minimum DIMM configuration installed so that your compute node operates properly.

8. If you are instructed to return the DIMM, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.
9. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

**Statement 21**



**CAUTION:**

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

10. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.

## Installing a DIMM

The very low profile (VLP) dual-inline memory module (DIMM) is a tier 1 CRU. You can install it yourself. If IBM installs a tier 1 CRU at your request, you will be charged for the installation. The low profile (LP) DIMM is a tier 2 CRU. You can install it yourself or request IBM to install it, at no additional charge, under the type of warranty service that is designated for the compute node.

### About this task

To install a DIMM, complete the following steps:

#### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Read the documentation that comes with the DIMMs.
3. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
4. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
5. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
6. Locate the DIMM connectors on the system board. Determine the connector into which you will install the DIMM. See “Supported DIMMs” on page 48.
7. Touch the static-protective package that contains the part to any unpainted metal surface on the IBM Flex System Enterprise Chassis or any unpainted metal surface on any other grounded rack component, and then remove the new part from its shipment package.
8. Verify that both of the connector retaining clips are in the fully open position.
9. Turn the DIMM so that the DIMM keys align correctly with the connector on the system board.

**Attention:** To avoid breaking the DIMM retaining clips or damaging the DIMM connectors, handle the clips gently.

10. Insert the DIMM (B) by pressing the DIMM along the guides into the connector.

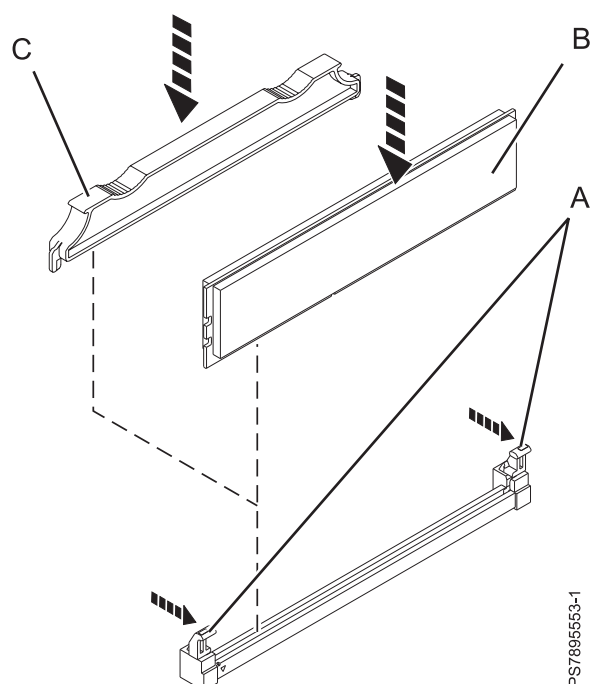


Figure 18. Installing a DIMM

Verify that each retaining clip (A) snaps into the closed position.

**Important:** If there is a gap between the DIMM and the retaining clips, the DIMM is not correctly installed. Open the retaining clips to remove and reinsert the DIMM. Install a DIMM filler (C) in any location where a DIMM is not present to avoid machine damage.

11. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

12. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
13. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

#### Related concepts:

“Supported DIMMs” on page 48

Your compute node contains connectors for registered dual inline memory modules (RDIMMs).

## Supported DIMMs

Your compute node contains connectors for registered dual inline memory modules (RDIMMs).

Each system board in the IBM Flex System p24L Compute Node contains connectors for 16 low profile (LP) or very low profile (VLP) memory DIMMs.

The maximum size for a single DIMM is 8 GB for a VLP DIMM and 32 GB for an LP DIMM. The maximum memory capacity for an IBM Flex System p24L Compute Node is 1024 GB.

### Memory module rules:

- Install DIMM fillers in unused DIMM slots for proper cooling.
- Install DIMMs in pairs (1 and 4, 5 and 8, 9 and 12, 13 and 16, 2 and 3, 6 and 7, 10 and 11, and 14 and 15).
- Both DIMMs in a pair must be the same size, speed, type, and technology. You can mix compatible DIMMs from different manufacturers.
- Each DIMM within a processor-support group (1-4, 5-8, 9-12, 13-16) must be the same size and speed.
- Install only supported DIMMs, as described on the ServerProven website.
- Installing or removing DIMMs changes the configuration of the compute node. After you install or remove a DIMM, the compute node is automatically reconfigured, and the new configuration information is stored.

The following table shows allowable placements of DIMM modules for the IBM Flex System p24L Compute Node.

Table 5. Memory module combinations for the IBM Flex System p24L Compute Node

DIMM count	IBM Flex System p24L Compute Node															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	X			X												
4	X			X					X			X				
6	X			X	X			X	X			X				
8	X			X	X			X	X			X	X			X
10	X	X	X	X	X			X	X			X	X			X
12	X	X	X	X	X			X	X	X	X	X	X			X
14	X	X	X	X	X	X	X	X	X	X	X	X	X			X
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

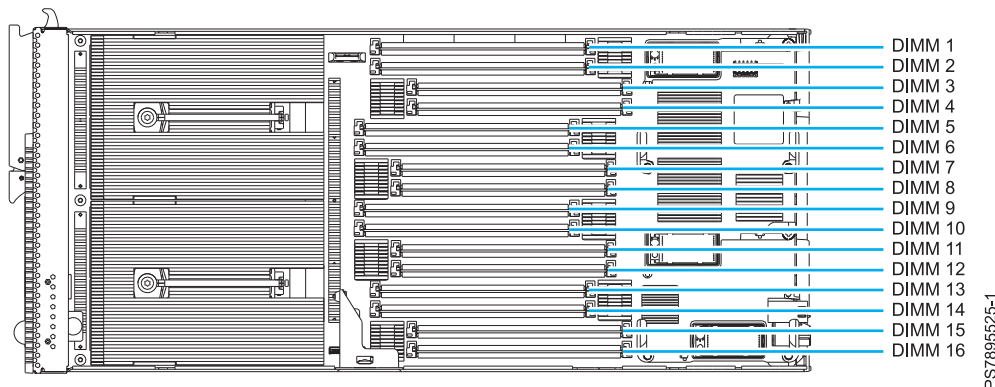



Figure 19. DIMM connectors for the IBM Flex System p24L Compute Node

### Related reference:

Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79  
The parts listing identifies each replaceable part and its part number.

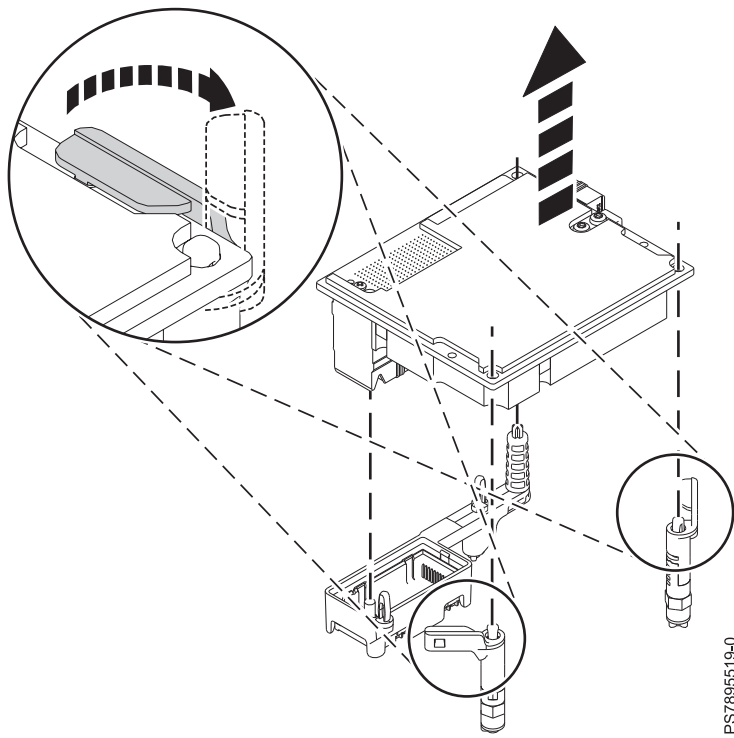
**Related information:**

 <http://www.ibm.com/systems/info/x86servers/serverproven/compat/us/>

## Removing a network adapter

If your network adapter needs to be replaced, you can remove it from its connector in a compute node.

### About this task



*Figure 20. Removing a network adapter from its connector*

To remove a network adapter, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.

3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Pull the slot’s two blue release tabs open, as indicated in Figure 20 on page 49.
6. Lift the network adapter up and away from its connector and out of the compute node.
7. If you are instructed to return the expansion card, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.
8. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.

9. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.

## Installing a network adapter

You can install a network adapter on its connector.

### About this task

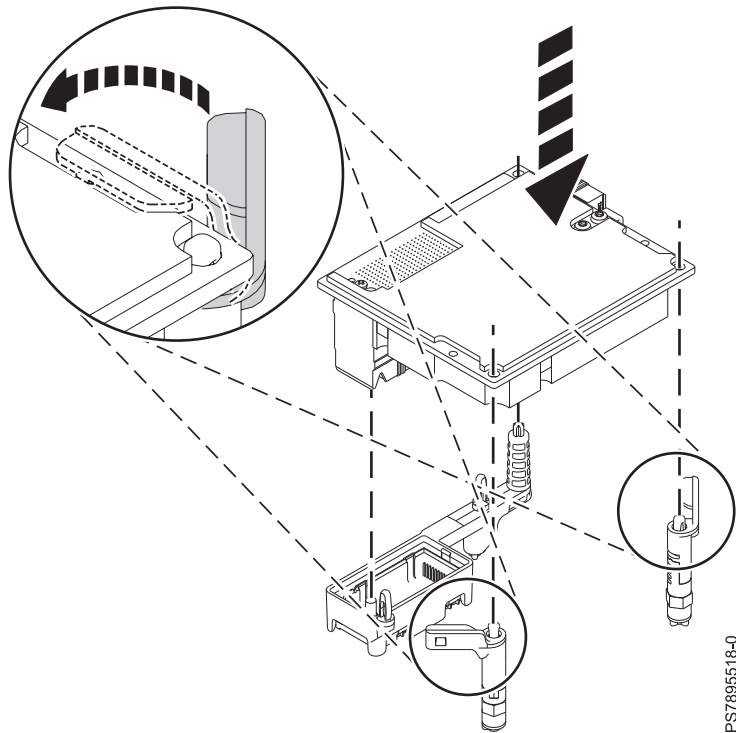


Figure 21. Installing a network adapter on its connector

To install a network adapter, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
4. Touch the static-protective package that contains the part to any unpainted metal surface on the IBM Flex System Enterprise Chassis or any unpainted metal surface on any other grounded rack component, and then remove the new part from its shipment package.
5. Make sure that the slot’s two blue release tabs are in the open position, as indicated in Figure 21 on page 50.
6. Orient the network adapter over the system board.
7. Lower the card to the system board, aligning the connectors on the card with its connector on the system board. Press down gently until the card is firmly seated.
8. Lock the adapter in place by moving the slot’s two blue release tabs into the closed position.
9. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

10. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
11. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.
12. Use the documentation that comes with the expansion card to install device drivers and to perform any configuration that the expansion card requires.

## Removing the battery

You can remove and replace the battery.

### About this task

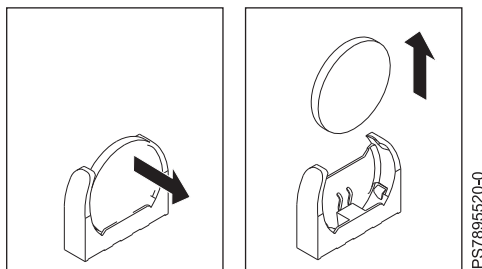


Figure 22. Removing the battery

To remove the battery, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the battery on the system board. See “System-board connectors” on page 12 for the location of the battery connector.

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the battery that must be replaced. See “System-board LEDs” on page 13.

6. Press the battery away from the outer wall of the compute node chassis.
7. Remove the battery.
8. Replace the battery. See “Installing the battery.”

## Installing the battery

You can install the battery.

### About this task

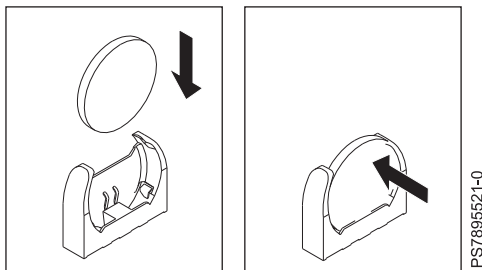


Figure 23. Installing the battery

The following notes describe information that you must consider when replacing the battery in the compute node.

- When replacing the battery, you must replace it with a lithium battery of the same type from the same manufacturer.
- To order replacement batteries, call 1-800-426-7378 within the United States, and 1-800-465-7999 or 1-800-465-6666 within Canada. Outside the US and Canada, call your IBM marketing representative or authorized reseller.
- After you replace the battery:
  1. Set the time and date.
  2. Set the network IP addresses (for compute nodes that start from a network).
  3. Reconfigure any other compute node settings.
- To avoid possible danger, read and follow the following safety notice.

#### Statement 2:





**CAUTION:**

When replacing the lithium battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

**Do not:**

- Throw or immerse into water
- Heat to more than 100°C (212°F)
- Repair or disassemble

Dispose of the battery as required by local ordinances or regulations.

To install the battery, complete the following steps:

**Procedure**

1. Follow any special handling and installation instructions that come with the battery.
2. Tilt the battery so that you can insert it into the socket. Make sure that the side with the positive (+) symbol is facing the correct direction.
3. Press the battery toward the outer wall of the compute node chassis until fully inserted into the battery holder.
4. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

**Statement 21****CAUTION:**

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

5. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
6. Turn on the compute node and reset the system date and time through the operating system that you installed. For additional information, see your operating-system documentation.
7. Ensure that the system time is correct in each of the logical partitions. For additional information, see the documentation for your operating system.
8. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

---

## Removing and replacing tier 2 CRUs

Use this information for removing and replacing tier 2 CRUs.

### About this task

You can install a tier 2 CRU, or you can request IBM to install it, at no additional charge, under the type of warranty service that is designated for the compute node.

## Removing a DIMM

The very low profile (VLP) dual-inline memory module (DIMM) is a tier 1 CRU. You can remove it yourself. If IBM removes a tier 1 CRU at your request, you will be charged for the removal. The low profile (LP) DIMM is a tier 2 CRU. You can remove it yourself or request IBM to remove it, at no additional charge, under the type of warranty service that is designated for the compute node.

### About this task

To remove a DIMM, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the DIMM connector that contains the DIMM being replaced.

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the DIMM that must be replaced. See “System-board LEDs” on page 13.

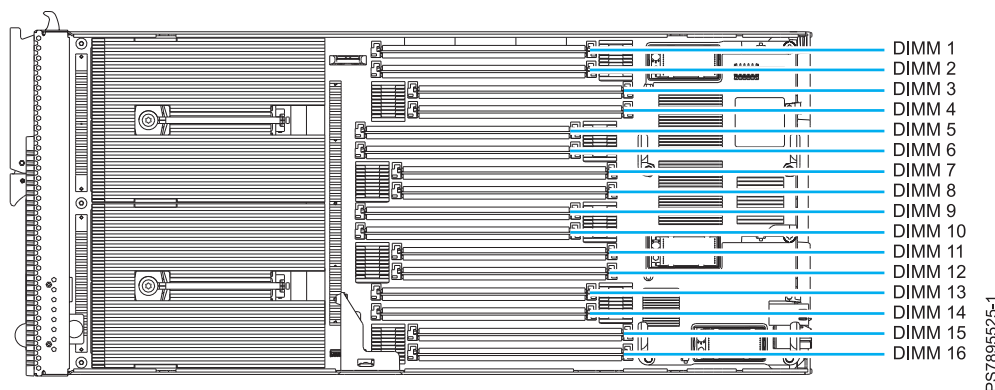


Figure 24. DIMM connectors for the IBM Flex System p24L Compute Node

**Attention:** To avoid breaking the DIMM retaining clips or damaging the DIMM connectors, open and close the clips gently.

6. Carefully open the retaining clips (A) on each end of the DIMM connector by pressing them in the direction of the arrows. Remove the DIMM (B).

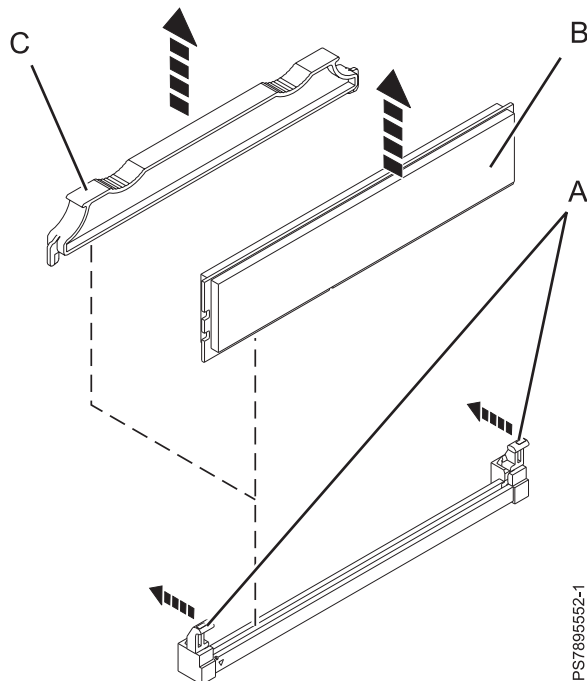


Figure 25. Removing a DIMM

7. Install a DIMM filler (C) in any location where a DIMM is not present to avoid machine damage.

**Note:** Before you replace the compute node cover, ensure that you have at least the minimum DIMM configuration installed so that your compute node operates properly.

8. If you are instructed to return the DIMM, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.
9. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

**Statement 21**



**CAUTION:**

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

10. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.

## Installing a DIMM

The very low profile (VLP) dual-inline memory module (DIMM) is a tier 1 CRU. You can install it yourself. If IBM installs a tier 1 CRU at your request, you will be charged for the installation. The low profile (LP) DIMM is a tier 2 CRU. You can install it yourself or request IBM to install it, at no additional charge, under the type of warranty service that is designated for the compute node.

### About this task

To install a DIMM, complete the following steps:

#### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Read the documentation that comes with the DIMMs.
3. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
4. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
5. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
6. Locate the DIMM connectors on the system board. Determine the connector into which you will install the DIMM. See “Supported DIMMs” on page 48.
7. Touch the static-protective package that contains the part to any unpainted metal surface on the IBM Flex System Enterprise Chassis or any unpainted metal surface on any other grounded rack component, and then remove the new part from its shipment package.
8. Verify that both of the connector retaining clips are in the fully open position.
9. Turn the DIMM so that the DIMM keys align correctly with the connector on the system board.  
**Attention:** To avoid breaking the DIMM retaining clips or damaging the DIMM connectors, handle the clips gently.
10. Insert the DIMM (**B**) by pressing the DIMM along the guides into the connector.

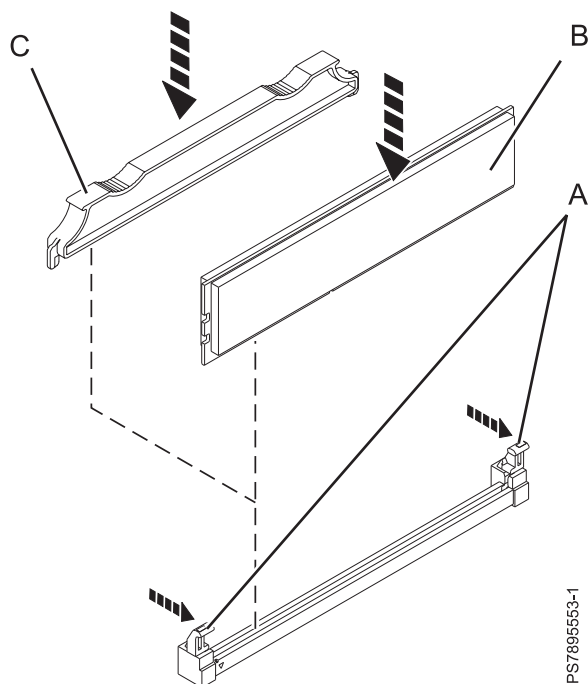


Figure 26. Installing a DIMM

Verify that each retaining clip (**A**) snaps into the closed position.

**Important:** If there is a gap between the DIMM and the retaining clips, the DIMM is not correctly installed. Open the retaining clips to remove and reinsert the DIMM. Install a DIMM filler (C) in any location where a DIMM is not present to avoid machine damage.

11. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

**Statement 21**



**CAUTION:**

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

12. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
13. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

**Related concepts:**

“Supported DIMMs” on page 48

Your compute node contains connectors for registered dual inline memory modules (RDIMMs).

## Removing the management card

You can remove this tier 2 CRU, or you can request IBM to remove it, at no additional charge, under the type of warranty service that is designated for the compute node. Remove the management card to replace the card or to reuse the card in a new system-board and chassis assembly.

### Before you begin

**Attention:** Replacing the management card and the system board at the same time might result in the loss of vital product data (VPD) and information concerning the number of active processor cores. If the management card and system board must both be replaced, replace them one at a time. For further assistance, contact your next level of support.

### About this task

To remove the management card, which is shown by **1** in Figure 27 on page 59, complete the following steps.

**Note:** See **5** in Figure 2 on page 12 for the location of the management card on the system board.

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Were you sent to this procedure from the Replacing the system-board and chassis assembly procedure?

**Yes:** Go to step 9 on page 58.

**No:** Continue with the next step.

3. If the compute node has logical partitions, save all the data in each logical partition and shut down the operating system of each partition of the compute node. Do not remove the compute node from the IBM Flex System Enterprise Chassis at this time.
4. Access the Advanced System Management Interface (ASMI).  
If you are already connected to the ASMI, go to step 5.
  - To access the ASMI through the IBM Flex System Manager (FSM), see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_launch\\_asm.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_launch_asm.html).
  - To access the ASMI through the Hardware management (HMC), complete the following steps:
    - a. Select the server that you are working with.
    - b. Click **Tasks > Operations > Launch Advanced System Management (ASM)**.
  - If you do not have a management console, access ASMI by using a web interface. For more information, see Chapter 5, “Accessing the service processor,” on page 25.
5. Save the system identifiers.

**Note:** To complete this operation, your authority level must be administrator or authorized service provider. For information about ASMI authority levels, see <http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hby/asmiauthority.htm>.

- a. In the ASM Welcome pane, if you have not already logged in, specify your user ID and password, and click **Log In**.
- b. In the navigation area, select **System Configuration > Program Vital Product Data > System Brand**.
- c. Manually record the value for the system brand, which will be displayed in the right pane.
- d. In the navigation area, select **System Configuration > Program Vital Product Data > System Keywords**.
- e. Manually record the Machine type-model, System serial number, System unique ID values, Reserved, and RB keyword0.
- f. In the navigation area, select **System Configuration > Program Vital Product Data > System Enclosures**.
- g. In the right pane, select the **Enclosure location: UXXXX.YYY.ZZZZ** and click **Continue**.
- h. Manually record the values of Enclosure location, Feature Code/Sequence Number, Enclosure serial number, and Reserved.
6. Turn off the compute node and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
7. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
8. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
9. If an I/O expansion card is in the first slot, remove it to access the management card.

**Note:** You can use the system-board LEDs and the service label that is located on the inside of the cover to identify the management card that must be replaced. See “System-board LEDs” on page 13.

10. Grasp the management card and pull it vertically out of the unit to disengage the connectors.

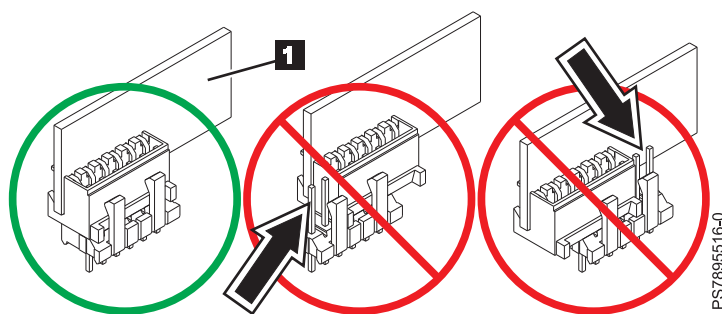


Figure 27. Removing the management card

11. If you are instructed to return the management card, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.
12. Replace the management card. See “Installing the management card.”

## Installing the management card

You can install this tier 2 CRU, or you can request IBM to install it, at no additional charge, under the type of warranty service that is designated for the compute node. Use this procedure to install the management card into the currently installed system board. If you are also installing a new system board, you must complete this procedure before you install the new system board.

### Before you begin

**Attention:** Replacing the management card and the system board at the same time might result in the loss of vital product data (VPD) and information concerning the number of active processor cores. If the management card and system board must both be replaced, replace them one at a time. For further assistance, contact your next level of support.

### About this task

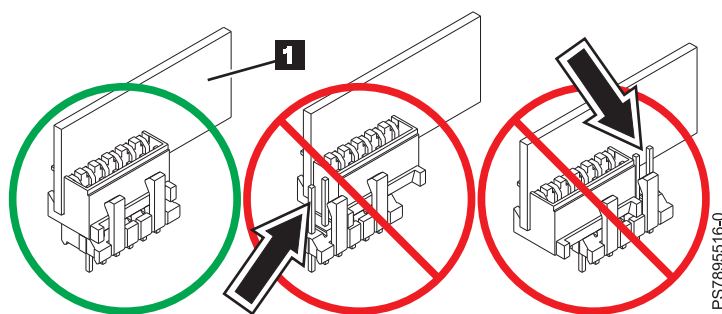


Figure 28. Installing the management card

To install the management card, which is shown by **1** in Figure 28, complete the following steps:

### Procedure

1. Read the documentation that comes with the management card, if you ordered a replacement card.
2. Locate the connector on the currently installed system board into which the management card will be installed. See **5** in Figure 2 on page 12 for the location.

**Note:** If an I/O expansion card is in the first slot, remove it to access the management card connector.

3. Touch the static-protective package that contains the management card to any *unpainted* metal surface on the IBM Flex System Enterprise Chassis or any *unpainted* metal surface on any other grounded rack component, and then remove the management card from its package.
4. Insert the management card (as shown by **1** in Figure 28 on page 59) and verify that the card is securely on the connector and pushed down all the way to the main board.
5. Were you sent to this procedure from the “Replacing the system-board and chassis assembly” on page 67 procedure?

**Yes:** Return to the Return to the Replacing the system-board and chassis assembly procedure.

**No:** Continue with the next step.

6. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

7. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
8. Power on the compute node. If a Virtual I/O Server (VIOS) partition is installed, power on only the VIOS partition. If VIOS is not installed, power on one of the partitions. If the compute node is managed by a management console, wait for the compute node to be discovered by the management console before continuing with the next step.

**Attention:** If the management card was not properly installed, the power-on LED flashes rapidly and a communication error is reported to the management console. If this occurs, remove the compute node from the IBM Flex System Enterprise Chassis, as described in “Removing the management card” on page 57. Reseat the management card, and then reinstall the compute node in the IBM Flex System Enterprise Chassis.

9. A new Virtualization Engine technologies (VET) code must be generated and activated. Perform “Obtaining a PowerVM Virtualization Engine system technologies activation code” on page 61. Wait at least five minutes to ensure that the VET activation code is stored in the vital product data on the management card and then power off the operating system and the compute node. Continue with the next step of this procedure.
10. Access the Advanced System Management Interface (ASMI).

If you are already connected to the ASMI, go to the step 11 on page 61.

- To access the ASMI through the IBM Flex System Manager (FSM), see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_launch\\_asm.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_launch_asm.html).
- To access the ASMI through the Hardware management (HMC), complete the following steps:
  - a. Select the server that you are working with.
  - b. Click **Tasks > Operations > Launch Advanced System Management (ASM)**.
- If you do not have a management console, access ASMI by using a web interface. For more information, see Chapter 5, “Accessing the service processor,” on page 25.



11. Verify that the management card VPD is correct.

**Note:** To complete this operation, your authority level must be administrator or authorized service provider. For information about ASMI authority levels, see <http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hby/asmiauthority.htm>.

- a. In the ASM Welcome pane, if you are not already logged in, specify your user ID and password, and click **Log In**.
  - b. In the navigation area, select **System Configuration > Program Vital Product Data > System Brand**.
  - c. Verify the system brand information matches what you recorded during the removal procedure. Otherwise, contact your next level of support.
  - d. In the navigation area, select **System Configuration > Program Vital Product Data > System Keywords**.
  - e. Verify the system keywords information matches what you recorded during the removal procedure. Otherwise, contact your next level of support.
  - f. In the navigation area, select **System Configuration > Program Vital Product Data > System Enclosures**.
  - g. In the right pane, select the **Enclosure location: UXXXX.YYY.ZZZZ** and click **Continue**.
  - h. Verify the system enclosures information matches what you recorded during the removal procedure. Otherwise, contact your next level of support.
12. Power on the compute node and the operating system of each partition of the compute node.
  13. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see "Compute node control panel button and LEDs" on page 9.

## Obtaining a PowerVM Virtualization Engine system technologies activation code

After you replace the management card, you must reenter the activation code for the PowerVM function to enable virtualization.

Before you complete this procedure, install the management card, as described in Installing the management card.

PowerVM is one of the Capacity on Demand advanced functions. Capacity on Demand advanced functions are also referred to as Virtualization Engine systems technologies or Virtualization Engine technologies (VET).

To locate your VET code and then install the code on your compute node, complete the following steps:

1. Power on the compute node. If a Virtual I/O Server (VIOS) partition is installed, power on only the VIOS partition. If VIOS is not installed, power on one of the partitions.
2. List the activation information that you must supply when the new VET activation code is ordered through one of the following methods:
  - By using Advanced System Management Interface (ASMI):
    - a. Access the ASMI.

If you are already connected to the ASMI, go to step 2c on page 62.

      - 1) To access the ASMI through the IBM Flex System Manager (FSM), see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_launch\\_asm.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_launch_asm.html).
      - 2) To access the ASMI through the Hardware Management Console (HMC), complete the following steps:
        - a) Select the server that you are working with.

- b) Click **Tasks > Operations > Launch Advanced System Management (ASM)**.
- 3) If you do not have a management console, access ASMI by using a web interface. For more information, see Chapter 5, “Accessing the service processor,” on page 25.
- b. In the ASM Welcome pane, if you have not already logged in, specify your user ID and password, and then click **Log In**.
- c. In the navigation area, select **On Demand Utilites > CoD VET Information**.

The following is an example of the CoD VET information output:

**Note:** When you request the activation code, you must supply the information that is emphasized in the following example.

```
CoD VET Information
System type: 7895
System serial number: 12-34567
Card type: 52EF
Card serial number: 01-231S000
Card ID: 30250812077C3228
Resource ID: CA1F
Activated Resources: 0000
Sequence number: 0040
Entry check: EC
```

Go to step 3.

- By using HMC:
  - a. In the navigation area, expand **Systems Management**.
  - b. Select **Servers**.
  - c. In the contents area, select the destination compute node.
  - d. Click **Tasks > select Capacity on Demand (CoD) > PowerVM > View Code Information**.

The following is an example of the PowerVM output:

**Note:** When you request the activation code, you must supply the information that is emphasized in the following example.

```
CoD VET Information
System type: 7895
System serial number: 12-34567
Anchor card CCIN: 52EF
Anchor card serial number: 01-231S000
Anchor card unique identifier: 30250812077C3228
Resource ID: CA1F
Activated Resources: 0000
Sequence number: 0040
Entry check: EC
```

Go to step 3.

- By using FSM:
  - a. On the Chassis Manager page, under **Common Actions**, click **General Actions > Manage Power Systems Resources**. The Manage Power Systems Resources page is displayed.
  - b. Select the destination compute node.
  - c. Click **Actions**, and select **System Configuration > Capacity on Demand (CoD)**.
  - d. In the Capacity on Demand window, select **Advanced Functions** from the **Select On Demand Type** list.
  - e. In the table, select **PowerVM** as the **Type**.
  - f. Click **View Code Information**.

The following is an example of the PowerVM output:

**Note:** When you request the activation code, you must supply the information that is emphasized in the following example.

CoD VET Information  
**System type:** 7895  
**System serial number:** 12-34567  
**Anchor card CCIN:** 52EF  
**Anchor card serial number:** 01-231S000  
**Anchor card unique identifier:** 30250812077C3228  
Resource ID: CA1F  
Activated Resources: 0000  
Sequence number: 0040  
Entry check: EC

Go to step 3.

- By using Integrated Virtualization Manager (IVM):
  - a. Start the IVM, if it is not running already.
  - b. In an IVM session, enter the `lsvet -t` code command.

The following is an example of the `lsvet` command output:

**Note:** When you request the activation code, you must supply the information that is emphasized in the following example.

```
sys_type=7895,sys_serial_num=12-34567,anchor_card_ccin=52EF,  
anchor_card_serial_num=01-231S000, anchor_card_unique_id=30250812077C3228,  
resource_id=CA1F,activated_resources=0000,sequence_num=0040, entry_check=EC
```

Go to step 3.

3. Send a request for the VET activation code for your replacement management card to the System p<sup>®</sup> Capacity on Demand mailbox at [pcod@us.ibm.com](mailto:pcod@us.ibm.com).

If the ASMI was used to get the VET information, include the following fields and their values:

- System type
- System serial number
- Card type
- Card serial number
- Card ID

If the HMC or FSM was used to get the VET information, include the following fields and their values:

- System type
- System serial number
- Anchor card CCIN
- Anchor card serial number
- Anchor card unique identifier

If the IVM `lsvet -t` code command was used to get the VET information, include the following fields and their values:

- `sys_type`
- `sys_serial_num`
- `anchor_card_ccin`
- `anchor_card_serial_num`
- `anchor_card_unique_id`

Following is an example of a statement that you can include in the email:

Provide a VET activation code for the new  
management card (anchor card) in my Flex power compute node.

The System p Capacity on Demand site then generates the code and posts the VET activation code on the website.

4. Go to the Capacity on Demand Activation code web page to retrieve your code.

- a. Enter the system type, which is the value of the `sys_type` field from the IVM or the **System type** field from the ASMI, HMC, or FSM.
- b. Enter the serial number, which is the value of the `sys_serial_num` from the IVM or the **System serial number** field from the ASMI, HMC, or FSM.

If the code has not yet been assigned, then the following note is displayed:

No matching activation code found.

Otherwise, look for a VET entry with a date that aligns with your request date. Then, record the corresponding VET activation code.

5. Enter the VET activation code to activate PowerVM virtualization through one of the following methods:
  - For ASMI, HMC, or IVM graphical user interface (GUI), see <http://www.ibm.com/support/entry/portal/docdisplay?Indocid=MIGR-5091991>.
  - For FSM, see <http://www.ibm.com/support/entry/portal/docdisplay?Indocid=MIGR-5091991>.
  - For IVM command-line interface (CLI), complete the following steps:
    - a. In an IVM session, enter the following command to activate the 34-character VET activation code.  
`chvet -o e -k <activation_code>`  
 Where, *<activation\_code>* is the Activation Code.  
 For example, if the activation code is 4D8D6E7A81409365CA1F000028200041FD, enter the following command:  
`chvet -o e -k 4D8D6E7A81409365CA1F000028200041FD`
    - b. In an IVM session, validate that the code entry is successful by using the `lsvet -t hist` command.

The following is an example of the command output:

```
time_stamp=03/06/2013 16:25:08,"entry=[VIO5I05000400-0331] CoD advanced
functions activation code entered, resource ID: CA1F, capabilities: 2820."
time_stamp=03/06/2013 16:25:08,entry=[VIO5I05000403-0332] Virtual I/O server
capability enabled.
time_stamp=03/06/2013 16:25:08,entry=[VIO5I05000405-0333] Micro-partitioning
capability enabled.
```

**This ends the procedure.**

The procedure does not require you to restart the compute node to activate the PowerVM virtualization functions.

**Note:** If you intend to restart the compute node after you complete this procedure, wait at least 5 minutes before you restart the compute node, or before you power off and power on the compute node. This is to ensure that the activation code is stored in the vital product data on the management card.

## Removing the light path diagnostics panel

You can remove this tier 2 CRU, or you can request IBM to remove it, at no additional charge, under the type of warranty service that is designated for the compute node. Remove the light path diagnostics panel to replace the panel or to reuse the panel in a new system-board and chassis assembly.

### About this task

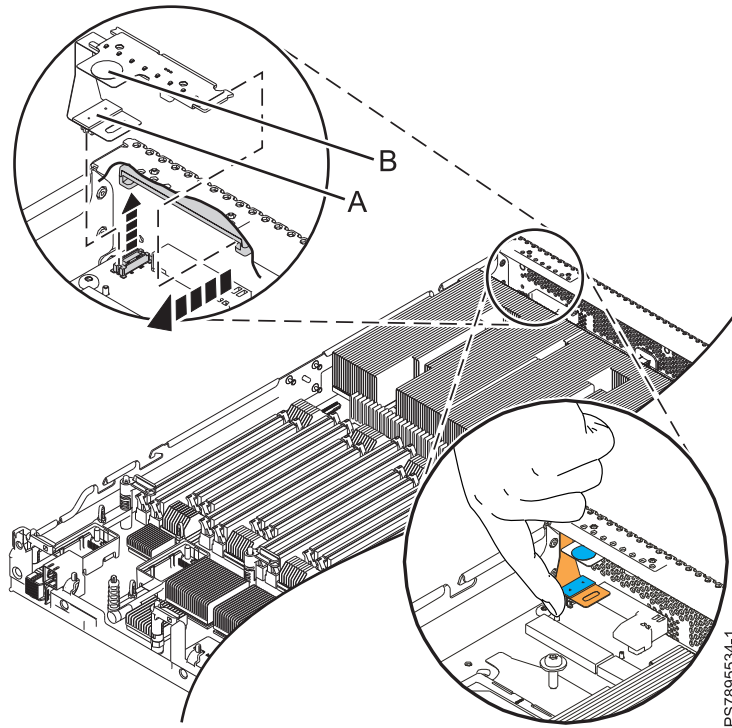


Figure 29. Removing the light path diagnostics panel

To remove the light path diagnostics panel, which is shown in Figure 29, complete the following steps.

**Note:** See **7** in Figure 2 on page 12 for the location of the light path panel on the system board.

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.

5. Grasp the light path diagnostics panel by its pull tab **(B)** and pull it horizontally out of its bracket.
6. Disconnect the cable **(A)** from the system board. For best maneuverability, orient yourself in front of the compute node. Use your index finger to reach under the cable connection and pull it up, as shown in Figure 29 on page 65.

**Note:** You can use the system-board LEDs and the service label located on the inside of the cover to identify the light path diagnostics panel that must be replaced. See “System-board LEDs” on page 13.

7. If you are instructed to return the light path diagnostics panel, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

## Installing the light path diagnostics panel

You can install this tier 2 CRU, or you can request IBM to install it, at no additional charge, under the type of warranty service that is designated for the compute node. Use this procedure to install the light path diagnostics panel into the currently installed system board. If you are also installing a new system board, you must complete this procedure before installing the new system board.

### About this task

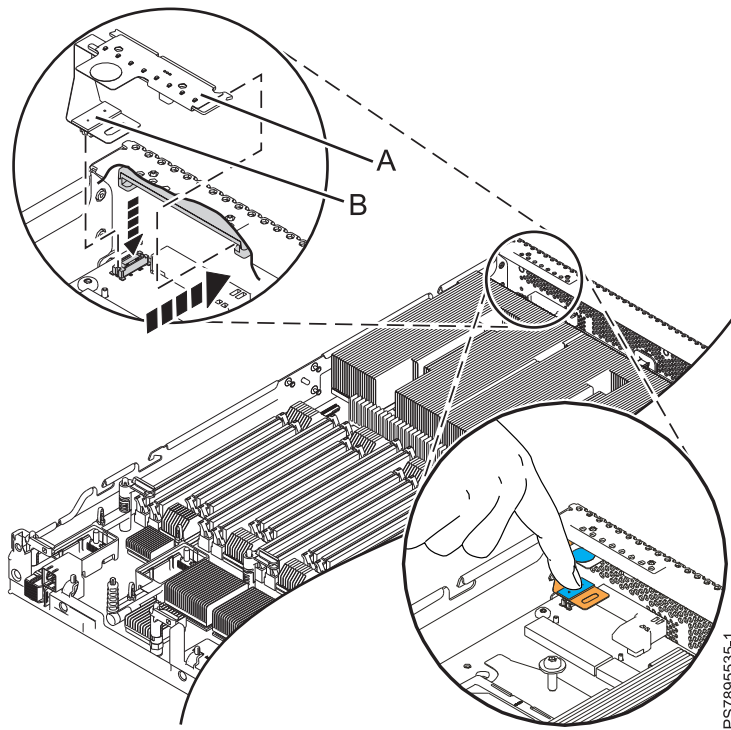


Figure 30. Installing the light path diagnostics panel

To install the light path diagnostics panel, which is shown in Figure 30, complete the following steps:

### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
3. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
4. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
5. Locate the connector on the currently installed system board into which the light path panel will be installed. See **7** in Figure 2 on page 12 for the location of the light path panel on the system board.
6. For best maneuverability and visibility, orient yourself on the right side of the compute node.
7. Using your right hand, connect the cable (**B**) on the system board by pressing it in its connector slot by using your index finger.
8. Align the light path diagnostics panel (**A**) with its bracket. The blue touchpoint tab faces toward the back of the compute node.
9. Press the light path diagnostics panel securely in the bracket.
10. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

11. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
12. If you replaced the part because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see “Compute node control panel button and LEDs” on page 9.

---

## Removing and replacing FRUs (trained service technician only)

### About this task

A FRU must be installed only by trained service technicians.

### Replacing the system-board and chassis assembly

Field replaceable units (FRUs) must be replaced only by trained service technicians. When replacing the system-board, you replace the system-board, compute node base (chassis), microprocessors, and heat sinks as a single assembly.

## Before you begin

**Attention:** Replacing the management card and the system-board at the same time might result in the loss of vital product data (VPD) and information about the number of active processor cores. If the management card and system-board must both be replaced, replace them one at a time. For further assistance, contact your next level of support.

## About this task

**Note:** For more information about the locations of the connectors and LEDs on the system-board, see “System-board layouts” on page 11.

To replace the system-board and chassis assembly, complete the following steps:

## Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Is the compute node managed by a management console?  
**Yes** Continue with step 3.  
**No** Continue with step 5 on page 69.
3. If the compute node has Virtual I/O Server (VIOS) installed or uses more than one partition, have the customer back up partition profile data by using one of the following methods:
  - If this system is managed by an IBM Flex System Manager (FSM) management console, back up partition profile data. Using the Systems management command-line interface (SMCLI), enter the **bkprofddata** command. See `smcli - Systems management command-line interface` ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.cli.helps.doc/fqm0\\_r\\_cli\\_smcli.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.cli.helps.doc/fqm0_r_cli_smcli.html)). For more information about the **bkprofddata** command, see `BKPROFDATA` (<http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.reference.doc/manpages/psm.bkprofddata.html>).

**Note:** If the backup operation fails because the compute node is in an error state, save the configuration files by using the log collection tool. See `Collecting pedbg on Flex System Manager (FSM)` (<https://www.ibm.com/support/docview.wss?uid=nas777a837116ee2fca8862578320079823c>).

- If this system is managed by an Hardware Management Console (HMC), back up the partition profile data by using the HMC. See `Backing up the partition profile data` (<http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hbm/backupprofddata.htm>).

**Note:** If the backup fails because the compute node is in an error state, save the configuration files by using the log collection tool. See `Version 7 or 8 HMC: Collecting PEDBG from the HMC` (<http://www.ibm.com/support/docview.wss?uid=nas8N1018878>).

- If this system is managed by an Integrated Virtualization Manager (IVM), back up the partition profile data. Using the IVM command line, enter the **bkprofddata** command. For more information about the **bkprofddata** command, see `IVM bkprofddata command` (<http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hcg/bkprofddata.htm>).

If no backup data is available and the back-up partition profile data operation fails, the partition details cannot be restored. The partitions must be rebuilt after hardware recovery.

**Note:** Although the FSM and HMC management consoles automatically save partition profile data, which is used for recovery in step 28 on page 72, the manual partition profile data backup that is completed in step 3 is recommended as a precaution and best practice before you replace the system-board.



4. Does the compute node have Fibre Channel adapters?

**Yes** If the VIOS is operational, have the customer complete “Save vfchost map data” on page 451. Then, continue with the next step.

**Note:** If the VIOS is not operational and vfchost map data is not available from a previous save operation, the vfchost mapping must be manually re-created (see step 31 on page 73) before powering on partitions.

**No** Continue with the next step.

5. Have the customer record the system name of the compute as shown on the Advanced System Management Interface (ASMI). The system name is displayed near the top of the ASMI Welcome pane (for example **Server-7895-43X-SNABC1234**). For information about how to access the ASMI, see Chapter 5, “Accessing the service processor,” on page 25.
6. Have the customer record the compute node IPv4 address and any static IPv6 addresses. Complete the following steps:
  - a. Access the Chassis Management Module (CMM) web interface. For instructions, see Ethernet connection ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote\\_console\\_ethernet\\_connect\\_cmm.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote_console_ethernet_connect_cmm.html)).
  - b. From the menu bar, click **Chassis Management**. Then, from the drop-down menu, click **Component IP Configuration**. From the **Device Name** list, click the compute node name to access the property tabs for the compute node. Record the address that is displayed in the IPv4 property tab. Record any static addresses that are displayed in the IPv6 property tab. For more information about displaying the IP configuration of a compute node, see Chassis management options ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm\\_ui\\_chassis\\_management.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm_ui_chassis_management.html)).
7. Have the customer record Serial over LAN (SOL) setting of the chassis and Serial over LAN setting of the compute node. Complete the following steps:
  - a. Access the Chassis Management Module (CMM) web interface. For instructions, see Ethernet connection ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote\\_console\\_ethernet\\_connect\\_cmm.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote_console_ethernet_connect_cmm.html)).
  - b. To record the Serial over LAN setting of the chassis, complete the following steps:
    - 1) From the menu bar, click **Chassis Management**.
    - 2) From the **Chassis Management** list, click **Compute Nodes**.
    - 3) Click the **Global Settings** button.
    - 4) In the **Global Node Settings** window, click the **Serial Over LAN** tab.
    - 5) Record the **Enable Serial Over LAN** check box setting.
    - 6) Click cancel to close the **Global Node Settings** window.
  - c. To record the Serial over LAN setting of the compute node, complete the following steps:
    - 1) From the **Device Name** list, click the compute node name to access the property tabs for the compute node.
    - 2) Click the **General** tab.
    - 3) Record the **Enable Serial Over LAN** check box setting.

8. Have the customer record the VIOS boot device. If multiple devices are mapped to the VIOS, record the current device.

**Note:** Boot device information is stored in the service processor of the system-board and it must be manually restored after the system-board is replaced with a new system-board.

Enter the following commands in the padmin shell of each VIOS partition:

- **oem\_setup\_env**
- **bootlist -m normal -o -v**

These commands provide the device tree path. Record the output information. This information is used in step 30 on page 73 of this procedure.

9. Have the customer shut down the operating system on all partitions of the compute node, and turn off the compute node.
10. Remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
11. Carefully lay the compute node on a flat, static-protective surface, with the cover side up.
12. Open and remove the compute node cover. See “Removing the compute node cover” on page 31.
13. Remove the bezel assembly. See “Removing the bezel assembly” on page 34.
14. Remove any of the following installed components from the system-board, and then place them on a nonconductive surface or install them on the new system-board and chassis assembly:
  - I/O expansion card. See “Removing a network adapter” on page 49.
  - DIMMs. See “Removing a DIMM” on page 44.
  - Management card. See “Removing the management card” on page 57.
15. Touch the static-protective package that contains the system-board and chassis assembly to any *unpainted* metal surface on the IBM Flex System Enterprise Chassis or any *unpainted* metal surface on any other grounded rack component, and then remove the assembly from its package.
16. Install any of the following components that were removed from the old system-board and chassis assembly:
  - Management card. See “Installing the management card” on page 59.
  - DIMMs. See “Installing a DIMM” on page 46.
  - I/O expansion card. See “Installing a network adapter” on page 50.

**Note:** Install a DIMM filler in any location where a DIMM is not present to avoid machine damage.

17. Install the bezel assembly. See “Installing the bezel assembly” on page 35 for instructions.
18. Install and close the compute node cover. See “Installing and closing the compute node cover” on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

19. Write the machine type, model number, and serial number of the compute node on the repair identification tag that is provided with the replacement system-board and chassis assembly. This information is on the identification label that is on the lower right corner of the bezel on the front of the compute node.

**Important:** Completing the information about the repair identification tag ensures future entitlement for service.
20. Place the repair identification tag on the bottom of the compute node chassis.
21. Install the compute node into the IBM Flex System Enterprise Chassis. Do not turn on the compute node until step 26 on page 72 or 27 on page 72 of this procedure, depending upon whether the compute node is managed by a management console. For more information about how to install the compute node, see “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
22. Have the customer set the compute node IPv4 address and any static IPv6 addresses. Complete the following steps:
  - a. Access the Chassis Management Module (CMM) web interface. For instructions, see Ethernet connection ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote\\_console\\_ethernet\\_connect\\_cmm.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote_console_ethernet_connect_cmm.html)).
  - b. In the menu bar, click **Chassis Management**. Then, in the drop-down menu, click **Component IP Configuration**. From the **Device Name** list, select the compute node name to access property tabs for the compute node. Set the address in the IPv4 property tab by using the information that is recorded in step 6 on page 69 of this procedure. Set any static addresses in the IPv6 property tab by using the information that is recorded in step 6 on page 69 of this procedure. For more information about displaying the IP configuration of a compute node, see Chassis management options ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm\\_ui\\_chassis\\_management.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/cmm_ui_chassis_management.html)).
23. Have the customer set the chassis and compute node level Serial over LAN (SOL) settings of the compute node. Complete the following steps:
  - a. Access the Chassis Management Module (CMM) web interface. For instructions, see Ethernet connection ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote\\_console\\_ethernet\\_connect\\_cmm.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.cmm.doc/remote_console_ethernet_connect_cmm.html)).
  - b. To set the Serial over LAN setting of the chassis, complete the following steps:
    - 1) In the menu bar, click **Chassis Management**.
    - 2) From the **Chassis Management** list, click **Compute Nodes**.
    - 3) Click the **Global Settings** button.
    - 4) In the **Global Node Settings** window, click the **Serial Over LAN** tab.
    - 5) Set the **Enable Serial Over LAN** check box by using the information that is recorded in step 7 on page 69 of this procedure. Then, click **OK** to save the setting.
    - 6) In the **SOL Global Configuration** window, click close.
  - c. To set the Serial over LAN setting of the compute node, complete the following steps:
    - 1) From the **Device Name** list, click the compute node name to access the property tabs for the compute node.
    - 2) Click the **General** tab.
    - 3) Set the **Enable Serial Over LAN** check box by using the information that is recorded in step 7 on page 69 of this procedure. Click apply to save the Serial Over LAN setting.
    - 4) In the **Node Properties** window, click close.

24. Have the customer set the compute node system name. Complete the following steps:
  - a. Access the ASMI. For information about how to access the ASMI, see Chapter 5, "Accessing the service processor," on page 25.
  - b. The system name was recorded in step 5 on page 69 of this procedure. If the correct system name is not displayed near the top of the ASMI Welcome pane, set the system name by clicking **System Configuration > System Name**.
25. Have the customer ensure that the Time-Of-Day setting is correct. Complete the following steps:
  - a. Access the ASMI. For information about how to access the ASMI, see Chapter 5, "Accessing the service processor," on page 25.
  - b. Click **System Configuration > Time Of Day**.
  - c. Ensure that the Time-Of-Day is set to the NTP mode or that the Time-Of-Day has the correct time in Coordinated Universal Time (UTC).

**Note:** If the Time-of-Day is set to the NTP mode, the ASMI center pane shows the following message - Changing date/time is not allowed when the system is in NTP mode and you cannot change the time. If the NTP mode is not set and the time is not correct in UTC, enter the correct time and save. This operation can be completed only when the compute node is turned off.

26. Is the compute node managed by a management console?

**Yes** Continue with step 27.

**No** Have the customer turn on the compute node, then continue with step 32 on page 74.

27. Have the customer complete the following steps:
  - a. Access the ASMI. For information about how to access the ASMI, see Chapter 5, "Accessing the service processor," on page 25.
  - b. Click **Power/Restart Control > Power On/Off System**.
  - c. Record the current setting in the **Server firmware start policy** field.
  - d. Change the Server firmware start policy setting to Standby (User-Initiated).
  - e. Click **Save Settings and Power on**.
28. If the compute node has VIOS installed or uses more than one partition, have the customer restore partition profile data by using one of the following methods:
  - If this system is managed by an FSM, ensure that the compute node is displayed on the **Manage Power Systems Resource** page. If the compute node is not displayed, complete the following actions in sequence, as needed:
    - a. Collect inventory on the chassis and request access. See Collecting inventory ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0\\_t\\_collecting\\_inventory.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0_t_collecting_inventory.html)).
    - b. If the compute node is still not displayed, reseal the compute node. See Removing the compute node from an IBM Flex System Enterprise Chassis ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.7895.doc/removing\\_the\\_blade\\_server.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.7895.doc/removing_the_blade_server.html)). Once the FSM discovers the compute node, then collect inventory on the chassis and request access again. See Collecting inventory ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0\\_t\\_collecting\\_inventory.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0_t_collecting_inventory.html)).
    - c. After the compute node is displayed on the **Manage Power Systems Resource** page, click **Hosts**. The compute node should have a state of Error with a detailed state of Recovery. This state indicates that the profile data of the node must be recovered from the FSM. Recover the partition profile data. For instructions, see Correcting a Recovery state for a server ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.troubleshooting.doc/dpsm\\_troubleshooting\\_managedsystemstate\\_recovery.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.troubleshooting.doc/dpsm_troubleshooting_managedsystemstate_recovery.html)).

**Note:** The compute node is turned on as part of the recovery process.

- If this system is managed by an HMC, complete the following steps:
  - a. Log in to the HMC.
  - b. Click **Systems Management > Servers**.
  - c. If the compute node displays Failed Authentication in the Status column and Incorrect password in the Reference code column, select the compute node and use the Update Password task to enter the correct password for the **USERID** user ID. After you have entered a correct password, the compute node displays Recovery in the Status column.
  - d. Recover the partition profile data. For instructions, see Correcting a Recovery state for a managed system ([http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7eav/aremanagedsystemstate\\_recovery.htm](http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7eav/aremanagedsystemstate_recovery.htm)).

**Note:** The compute node is turned on as part of the recovery process.

- If this system is managed by an IVM, turn on the compute node, then restore the partition profile data. Using the IVM command line, enter the **rstprofdata** command. For more information about the rstprofdata command, see IVM rstprofdata command (<http://www.ibm.com/support/knowledgecenter/api/content/nl/en-us/POWER7/p7hcg/rstprofdata.htm>).
29. Have the customer complete the following steps:
- a. Access the ASMI. For information about how to access the ASMI, see Chapter 5, “Accessing the service processor,” on page 25.
  - b. Click **Power/Restart Control > Power On/Off System**.
  - c. Change the Server firmware start policy setting to the value that was recorded in step 27 on page 72.
  - d. Click **Save Settings and continue system server firmware boot**.
30. Have the customer activate a VIOS partition by using one of the following methods:
- If this system is managed by an FSM, see Activating a virtual server ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.resources.doc/vs/sdmc\\_vs-activating\\_vs.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.resources.doc/vs/sdmc_vs-activating_vs.html)).
  - If this system is managed by an HMC, see Activate ([www.ibm.com/support/knowledgecenter/POWER7/p7ha1/smpactivate.htm](http://www.ibm.com/support/knowledgecenter/POWER7/p7ha1/smpactivate.htm)).
  - If this system is managed by an IVM, see Activating logical partitions (<http://www.ibm.com/support/knowledgecenter/POWER7/p7hch/iphchactivatelpar.htm>).
- Press **1** while the partition is being activated to enter the SMS menu. See Starting the SMS utility ([http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.7895.doc/starting\\_sms.html](http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.7895.doc/starting_sms.html)). At the SMS main menu, click **Select Boot Options** and restore the boot device order that is recorded in step 8 on page 70 of this procedure. Then, repeat this step for any remaining VIOS partitions, if applicable.
31. Does the compute node have Fibre Channel adapters?
- Yes**     Have the customer complete the steps in the “Restore vfchost map data” on page 452 topic. Then, continue with the next step.
- No**     Continue with the next step.

32. Have the customer reset the system date and time through the operating system that is installed. For more information, see the documentation for your operating system.
33. If the part was replaced because of a service action, verify the repair by checking that the amber enclosure fault LED is off. For more information, see "Compute node control panel button and LEDs" on page 9.

## What to do next

After replacing the system-board and chassis assembly, you must either update the system with the latest firmware or restore the pre-existing firmware.

---

## Completing the installation

To complete the installation, you must install and close the compute node cover, install the compute node into the IBM Flex System Enterprise Chassis, and turn on the compute node.

### Procedure

1. Install and close the compute node cover. See "Installing and closing the compute node cover" on page 32.

#### Statement 21



#### CAUTION:

**Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.**

2. Install the compute node into the IBM Flex System Enterprise Chassis. See "Installing the compute node in an IBM Flex System Enterprise Chassis" on page 76.
3. Turn on the compute node, as described in "Turning on the compute node" on page 10.

**Note:** If you have just connected the power cords of the IBM Flex System Enterprise Chassis to electrical outlets, you must wait until the power-on LED on the compute node flashes slowly before you press the power-control button.

4. If you installed an I/O expansion card, use the documentation that comes with the expansion card to install device drivers and to perform any configuration that the expansion card requires.
5. For certain optional devices, run the compute node SMS Utility program, as described in "Using the SMS utility" on page 18.

## Installing and closing the compute node cover

Install and close the cover of the compute node before you insert the compute node into the IBM Flex System Enterprise Chassis. Do not attempt to override this important protection.

### About this task

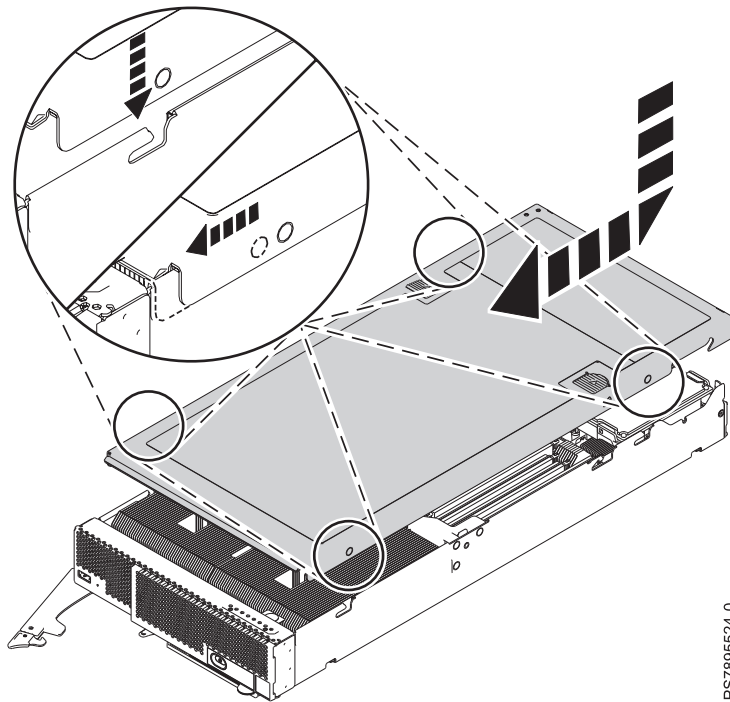


Figure 31. Installing the cover for an IBM Flex System p24L Compute Node

#### Statement 21



#### CAUTION:

Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.

To replace and close the compute node cover, complete the following steps:

#### Procedure

1. Read the Safety topic and the “Installation guidelines” on page 27.
2. Lower the cover so that the pins on the sides of the cover slide down into the slots (as shown in the preceding figures) at the front and rear of the compute node. Before you close the cover, verify that all components are installed and seated correctly and that you have not left loose tools or parts inside the compute node.
3. Slide the cover forward to the closed position until the releases click into place in the cover.
4. Install the compute node into the IBM Flex System Enterprise Chassis. See “Installing the compute node in an IBM Flex System Enterprise Chassis.”

## Installing the compute node in an IBM Flex System Enterprise Chassis

Install the compute node in an IBM Flex System Enterprise Chassis to use the compute node.

### About this task

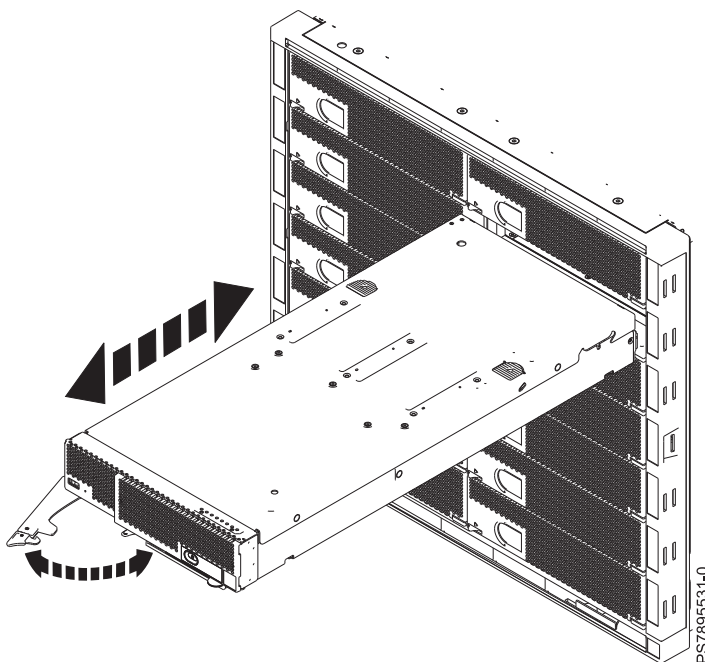


Figure 32. Installing the compute node in an IBM Flex System Enterprise Chassis

#### Statement 21



#### CAUTION:

Hazardous energy is present when the compute node is connected to the power source. Always replace the compute node cover before installing the compute node.

To install a compute node in an IBM Flex System Enterprise Chassis, complete the following steps:

### Procedure



1. Go to <http://www.ibm.com/support/entry/portal/Overview> to download the latest firmware for the compute node.  
Download the firmware so that you can use it later to update the compute node after you start it.
2. Read the Safety topic and the “Installation guidelines” on page 27.
3. If you have not done so already, install any optional devices that you want, such as a SAS drive or memory modules.
4. Select the bay for the compute node:
  - See <http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.common.nav.doc/chassis.html> that comes with your IBM Flex System Enterprise Chassis to verify that the bay you choose is powered.
  - Ensure proper cooling, performance, and system reliability by installing a compute node, expansion unit, or slot filler in each bay.
  - Reinstall a compute node in the same bay to preserve configuration information and update options that are established by the bay. Reinstalling into a different bay can have unintended consequences, which might include reconfiguring the compute node.
5. Verify that the release handles on the compute node are in the open position (perpendicular to the compute node, as shown in Figure 32 on page 76). There is one release handle.
6. Remove any existing compute node and filler nodes from the bay in which you plan to install the compute node.
7. Slide the compute node into the bay from which you removed it until the compute node stops.
8. Push the release handles on the front of the compute node to close and lock them.  
The discovery and initialization process can take up to 3 minutes to complete. The discovery and initialization process is complete when the green LED stops flashing rapidly and begins to flash slowly. At this point, you can power on the compute node.
9. Turn on the compute node. See “Turning on the compute node” on page 10.
10. Verify that the power-on LED on the compute node control panel is lit continuously. The continuous light indicates that the compute node is receiving power and is turned on.
11. Optional: Write identifying information on one of the user labels that come with the compute node and place the label on the IBM Flex System Enterprise Chassis bezel.  
**Important:** Do not place the label on the compute node or in any way block the ventilation holes on the compute node. See the online information or the documentation that comes with your IBM Flex System Enterprise Chassis for information about label placement.
12. Use the SMS Utility program to configure the compute node. See “Using the SMS utility” on page 18.
13. Also use the management module to configure the compute node. See the documentation for the management module to understand the functions that the management module provides.

## **What to do next**

If you have changed the configuration of the compute node or if this is a different compute node than the one you removed, you must configure the compute node. You might also have to install the compute node operating system.

See Chapter 4, “Installing the operating system,” on page 21 for detailed information about these tasks.

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## Chapter 7. Parts listing for IBM Flex System p24L Compute Node

The parts listing identifies each replaceable part and its part number.

Figure 33 on page 80 shows replaceable components that are available for the IBM Flex System p24L Compute Node.

Replaceable components are of three types:

- **Tier 1 customer replaceable unit (CRU):** Replacement of tier 1 CRUs is your responsibility. If IBM installs a tier 1 CRU at your request, you will be charged for the installation.
- **Tier 2 customer replaceable unit:** You can install a tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service that is designated for your compute node.
- **Field replaceable unit (FRU):** FRUs must be installed only by trained service technicians.

For information about the terms of the warranty and getting service and assistance, see the information center or the *Warranty and Support Information* document on the *IBM Flex System Enterprise Chassis Documentation CD*.

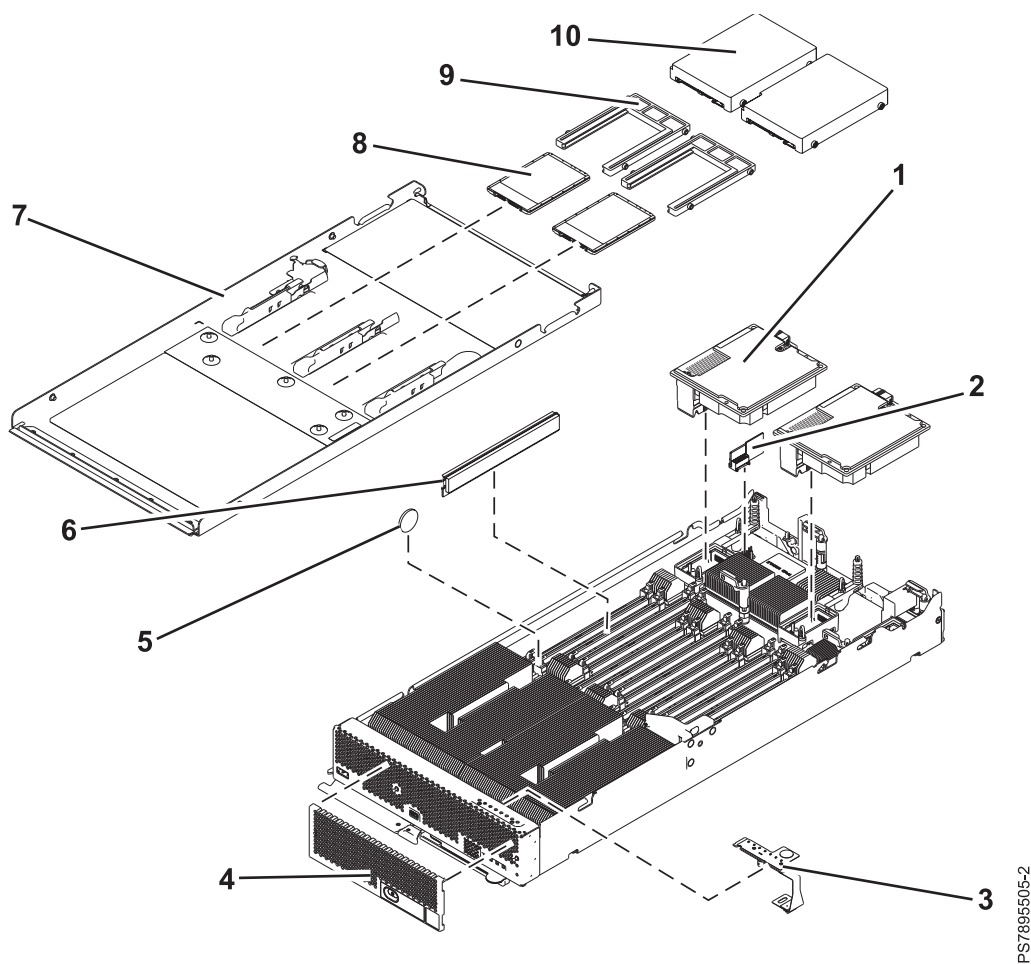


Figure 33. IBM Flex System p24L Compute Node parts

Table 6. IBM Flex System p24L Compute Node parts

Index	Description	CRU part number		FRU part number	Failing function code (FFC)
		(Tier 1)	(Tier 2)		
	1457-7FL base system-board and chassis assembly: <ul style="list-style-type: none"> <li>• 3.7 GHz, 12-core system board (CCIN 544F)</li> <li>• 3.2 GHz, 16-core system board (CCIN 547F)</li> <li>• 3.5 GHz, 16-core system board (CCIN 547B)</li> </ul>			<ul style="list-style-type: none"> <li>• 00E1175</li> <li>• 00E0746</li> <li>• 00E0740</li> </ul>	Various FFCs. See "Failing function codes" on page 409
1	IBM Flex System 2-port QDR InfiniBand adapter	90Y3461			2627
1	IBM Flex System 2-port 8 Gb Fibre Channel adapter	69Y1941			2E16
1	IBM Flex System 4-port 10 Gb Ethernet adapter	81Y3125			2E37
1	IBM Flex System 4-port 1 Gb Ethernet adapter	49Y7902			2E3D
1	IBM Flex System 8-port 10 Gb converged adapter	00E1677			2E28, 2E52
1	IBM Flex System 2-port 10 Gb RoCE adapter	90Y3481			2770

Table 6. IBM Flex System p24L Compute Node parts (continued)

Index	Description	CRU part number		FRU part number	Failing function code (FFC)
		(Tier 1)	(Tier 2)		
2	1457-7FL management card: <ul style="list-style-type: none"> <li>• Management card (CCIN 52E0) for 3.7 GHz, 12-core system board</li> <li>• Management card (CCIN 52E5) for 3.2 GHz, 16-core system board</li> <li>• Management card (CCIN 52E4) for 3.5 GHz, 16-core system board</li> </ul>		<ul style="list-style-type: none"> <li>• 00E0707</li> <li>• 00E0709</li> <li>• 00E0708</li> </ul>		
3	Light path diagnostics panel		81Y5290		
4	Bezel	00E5825			
4	OEM bezel	00J0455			
5	3.0V battery	33F8354			
6	Memory, 2 GB DDR3, 1066 MHz low profile (LP) DIMM		78P1011		
6	Memory, 4 GB DDR3, 1066 MHz very low profile (VLP) DIMM	78P0501			
6	Memory, 8 GB DDR3, 1066 MHz very low profile (VLP) DIMM	78P0502			
6	Memory, 8 GB DDR3, 1066 MHz very low profile (VLP) DIMM	78P1917			
6	Memory, 16 GB DDR3, 1066 MHz low profile (LP) DIMM		78P0639		
6	Memory, 16 GB DDR3, 1066 MHz low profile (LP) DIMM		78P1915		
6	Memory, 32 GB DDR3, 1066 MHz low profile (LP) DIMM		78P1539		
6	DIMM filler	60H2962			
7	Cover (supports two disk drives)	00J0290			
7	Cover (supports two solid-state drives)	00J0292			26BD
7	Cover (no drives supported)	00E6259			
8	177 GB SATA solid-state drive	74Y9115			26B4
9	Solid-state drive carrier	74Y9407			
10	300 GB SAS small form factor disk drive and screws (4) (option)	42D0628			268B
10	600 GB SAS small form factor disk drive and screws (4) (option)	49Y2023			26D2
10	900 GB SAS small form factor disk drive and screws (4) (option)	00J0017			26D7
10	Disk drive filler	40K5928			
	Service label	00J0134			
	FRU and CRU label	00E6284			
	Light path label	00J0140			
	Miscellaneous parts kit (left cam handle)	81Y5203			
	Miscellaneous parts kit (network adapter retention)	94Y4866			



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## Chapter 8. Troubleshooting

Use this information to diagnose and fix any problems that might occur in your compute node.

---

### Introduction to problem solving

This problem determination and service information helps you solve problems that might occur in your IBM Flex System Enterprise Chassis compute node. The information describes the diagnostic tools that come with the compute node, error codes and suggested actions, and instructions for replacing failing components.

Replaceable components are of three types:

- **Tier 1 customer replaceable unit (CRU):** Replacement of tier 1 CRUs is your responsibility. If IBM installs a tier 1 CRU at your request, you are charged for the installation.
- **Tier 2 customer replaceable unit:** You can install a tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service that is designated for your compute node.
- **Field replaceable unit (FRU):** FRUs must be installed only by trained service technicians.

The model number and serial number for the compute node are on the ID label on the bezel on the front of the compute node, and on a label on the bottom of the compute node that is visible when the compute node is not in the IBM Flex System Enterprise Chassis.

For information about the terms of the warranty and getting service and assistance, see the information center or the *Warranty and Support Information* document on the *IBM Flex System Enterprise Chassis Documentation CD*.

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### Solving problems

Use the diagnostic tools that are available to help you solve some common problems that might occur while you are setting up the compute node.

#### About this task

If you install the compute node in the IBM Flex System Enterprise Chassis and the compute node does not start, perform the following actions:

- Make sure that the IBM Flex System Enterprise Chassis is correctly connected to a power source.
- Reseat the compute node in the IBM Flex System Enterprise Chassis, as described in “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76.
- If the power-on LED is flashing slowly, turn on the compute node, as described in “Turning on the compute node” on page 10.
- If you have just added a new optional device or component, make sure that it is correctly installed and compatible with the compute node and its components. If the device or component is not compatible, remove it from the compute node, reinstall the compute node in the IBM Flex System Enterprise Chassis, and then restart the compute node.

If the compute node does not start after you have performed the preceding actions, see the online information or the *Problem Determination and Service Guide* on the *IBM Flex System Enterprise Chassis Documentation CD*.

The following tools are available to help you diagnose and solve hardware-related problems:

- **Power-on self-test (POST) firmware checkpoints and error codes**

The firmware checkpoints are progress codes that your compute node writes to the management-module event log during POST.

See the online information or the *Problem Determination and Service Guide* for more information.

- **Firmware error codes and location codes**

For detailed descriptions of the firmware error codes, see the online information or the *Problem Determination and Service Guide*.

Some firmware error codes also include location codes. The location code information is required to identify the failing component. Check the event log in the management module to determine the location code information that corresponds to the firmware error code.

For additional information about location codes, see the online information or the *Problem Determination and Service Guide*.

- **Troubleshooting tables**

Use the troubleshooting tables to find solutions to problems that have identifiable symptoms.

See the online information or the *Problem Determination and Service Guide* for your compute node.

- **Diagnostic utilities for the Linux operating system**

Diagnostic utilities for the Linux operating system are available from IBM. To obtain these utilities and information about them, see [http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ha5/obtain\\_service\\_tools.htm](http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/topic/p7ha5/obtain_service_tools.htm).

- **Light path diagnostics**

Use light path diagnostics LEDs on the system board to identify system errors. If the system-error LED on the system LED panel on the front or rear of the IBM Flex System Enterprise Chassis is lit, one or more error LEDs on the IBM Flex System Enterprise Chassis components also might be lit. These LEDs help identify the cause of the problem.

**Notes:**

- View the system event log in the IBM Flex System Enterprise Chassis management module.
- Before you have the compute node serviced, verify that you provide a Serial over LAN (SOL) connection to the compute node. To do this, you must configure the SOL feature on the compute node and start an SOL session as described in the *IBM Chassis Management Module Command-Line Interface Reference Guide*.
- You can also configure the service processor IP address by using the management module, and set up a SOL connection to the service processor.

---

## Diagnostics

Use the available diagnostic tools to help solve any problems that might occur in the compute node.



The first and most crucial component of a solid serviceability strategy is the ability to accurately and effectively detect errors when they occur. While not all errors are a threat to system availability, those that go undetected are dangerous because the system does not have the opportunity to evaluate and act if necessary. POWER7 processor-based systems are specifically designed with error-detection mechanisms that extend from processor cores and memory to power supplies and hard drives.

POWER7 processor-based systems contain specialized hardware detection circuitry for detecting erroneous hardware operations. Error checking hardware ranges from parity error detection coupled with processor instruction retry and bus retry, to ECC correction on caches and system buses.

IBM hardware error checkers have these distinct attributes:

- Continuous monitoring of system operations to detect potential calculation errors
- Attempted isolation of physical faults based on runtime detection of each unique failure
- Initiation of a wide variety of recovery mechanisms designed to correct a problem

POWER7 processor-based systems include extensive hardware and firmware recovery logic.

## Machine check handling

Machine checks are handled by firmware. When a machine check occurs, the firmware analyzes the error to identify the failing device and creates an error log entry.

If the system degrades to the point that the service processor cannot reach standby state, the ability to analyze the error does not exist. If the error occurs during hypervisor activities, the hypervisor initiates a system reboot.

In partitioned mode, an error that occurs during partition activity is reported to the operating system in the partition.

## Diagnostic tools

Tools are available to help you diagnose and solve hardware-related problems.

- **Power-on self-test (POST) progress codes (checkpoints), error codes, and isolation procedures**

The POST checks out the hardware at system initialization. IPL diagnostic functions test some system components and interconnections. The POST generates eight-digit checkpoints to mark the progress of powering up the compute node.

Use the management module to view progress codes.

The documentation of a progress code includes recovery actions for system hangs. See “POST progress codes (checkpoints)” on page 196 for more information.

If the service processor detects a problem during POST, an error code is logged in the management module event log. Error codes are also logged in the Linux `syslog` if possible. See “System reference codes (SRCs)” on page 90.

The service processor can generate codes that point to specific isolation procedures. See “Service processor problems” on page 428.

- **Light path diagnostics**

Use the light path diagnostic LEDs to identify failing hardware. If the enclosure fault LED on the front or rear of the IBM Flex System Enterprise Chassis is lit, one or more fault LEDs on the compute node will also be lit. Use the light path diagnostic LEDs on the compute node to help identify the failing item.

### LED locations

See “System-board LEDs” on page 13.

### Front panel

See “Compute node control panel button and LEDs” on page 9.

- **Troubleshooting tables**

Use the troubleshooting tables to find solutions to problems that have identifiable symptoms.

These tables are in the online information and the *Problem Determination and Service Guide* for your compute node.

- **Dump data collection**

In some circumstances, an error might require a dump to show more data. The Integrated Virtualization Manager (IVM) or Hardware Management Console (HMC) sets up a dump area. Specific IVM or HMC information is included as part of the information that can optionally be sent to IBM support for analysis.

See “Collecting dump data” for more information.

- **Diagnostic utilities for Linux operating systems**

Linux service and productivity tools include hardware diagnostic aids and productivity tools, and installation aids. The installation aids are provided in the IBM Installation Toolkit for the Linux operating system, a set of tools that aids the installation of the Linux operating system on IBM compute nodes that are based on IBM POWER7 Architecture technologies. You can also use the tools to update the IBM Flex System p24L Compute Node firmware.

Diagnostic utilities for the Linux operating system are available from IBM at <https://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/home.html>.

See “Installing service and productivity tools for Linux” on page 22 for more information.

- **Diagnostic utilities for other operating systems**

You can use the stand-alone diagnostics CD to perform diagnostics on the IBM Flex System p24L Compute Node, no matter which operating system is loaded on the compute node. However, other supported operating systems might have diagnostic tools that are available through the operating system. See the documentation for your operating system for more information.

## Collecting dump data

A dump might be critical for fault isolation when the built-in First Failure Data Capture (FFDC) mechanisms are not capturing sufficient fault data. Even when a fault is identified, dump data can provide additional information that is useful in problem determination.

### About this task

All hardware state information is part of the dump if a hardware checkstop occurs. When a checkstop occurs, the service processor attempts to dump data that is necessary to analyze the error from appropriate parts of the system.

**Note:** If you power off the compute node through the management module while the service processor is performing a dump, platform dump data is lost.

You might be asked to retrieve a dump to send it to IBM Support for analysis. The location of the dump data varies by operating system.

### Procedure

- For a Linux operating system, collect the dump from the `/var/log/dump` directory.
- For an IBM Flex System p24L Compute Node that is managed by the Integrated Virtualization Manager (IVM), collect the dump using the **Manage Dumps** task in the IVM console.
- To collect a system dump by using the Hardware Management Console (HMC), complete these steps:
  1. Perform a controlled shutdown of all partitions.

**Note:** A system dump will abnormally terminate any running partitions.

2. In the navigation area, open **Systems Management**.
3. Select the server and open it.
4. Select **Serviceability > Manage Dumps > Action > Initiate System Dump**. The dump is automatically saved to the HMC. For details on how to copy, report, or delete a dump after you have completed a dump, see *Managing dumps*.

## Location codes

Location codes identify components of the compute node. Location codes are displayed with some error codes to identify the compute node component that is causing the error.

See “System-board connectors” on page 12 for component locations.

### Notes:

1. Location codes do not indicate the location of the compute node within the IBM Flex System Enterprise Chassis. The codes identify components of the compute node only.
2. For checkpoints with no associated location code, see “Light path diagnostics” on page 446 to identify the failing component when there is a hang condition.
3. For checkpoints with location codes, use the following table to identify the failing component when there is a hang condition.
4. For 8-digit codes not listed in Table 7, see the “Checkout procedure” on page 414.

*Table 7. Location codes for IBM Flex System p24L Compute Node*

Components	Physical location code	CRU LED
<p><i>Un</i> location codes are for enclosure and VPD locations.</p> <p><i>Un</i> = <i>U</i><i>tttt</i>.<i>mmm</i>.<i>ssssss</i></p> <p><i>tttt</i> = system machine type  <i>mmm</i> = system model number  <i>ssssss</i> = system serial number</p>		
DIMM 1	<i>Un</i> -P1-C1	Yes
DIMM 2	<i>Un</i> -P1-C2	Yes
DIMM 3	<i>Un</i> -P1-C3	Yes
DIMM 4	<i>Un</i> -P1-C4	Yes
DIMM 5	<i>Un</i> -P1-C5	Yes
DIMM 6	<i>Un</i> -P1-C6	Yes
DIMM 7	<i>Un</i> -P1-C7	Yes
DIMM 8	<i>Un</i> -P1-C8	Yes
DIMM 9	<i>Un</i> -P1-C9	Yes
DIMM 10	<i>Un</i> -P1-C10	Yes
DIMM 11	<i>Un</i> -P1-C11	Yes
DIMM 12	<i>Un</i> -P1-C12	Yes

Table 7. Location codes for IBM Flex System p24L Compute Node (continued)

Components	Physical location code	CRU LED
DIMM 13	Un-P1-C13	Yes
DIMM 14	Un-P1-C14	Yes
DIMM 15	Un-P1-C15	Yes
DIMM 16	Un-P1-C16	Yes
Solid-state drive interposer (integrated in cover)	Un-P1-C17	Yes
SATA solid-state drive 1	Un-P1-C17-D1	Yes
SATA solid-state drive 2	Un-P1-C17-D2	Yes
Network adapter 1	Un-P1-C18	Yes
Network adapter 2	Un-P1-C19	Yes
Management card	Un-P1-C21	Yes
2.5 in. SAS disk drive 1	Un-P1-D1	Yes
2.5 in. SAS disk drive 2	Un-P1-D2	Yes
Battery	Un-P1-E1	Yes
USB port 1 (front panel)	Un-P1-T1	No
Integrated SAS controller	Un-P1-T2	No
Machine location code	Utttt.mmm.ssssss	No
Um codes are for firmware. The format is the same as for a Un location code.		
Um = Utttt.mmm.ssssss		
Firmware version	Um-Y1	

Table 8. Mapping network adapter ports to IBM Flex System Enterprise Chassis I/O bays for the IBM Flex System p24L Compute Node

Port location code	IBM Flex System 2-port QDR InfiniBand adapter	IBM Flex System 2-port 10 Gb RoCE adapter	IBM Flex System 2-port 8 Gb and 2-port 16 Gb Fibre Channel adapter	IBM Flex System 4-port 16 Gb Fibre Channel adapter	IBM Flex System 4-port 1 Gb Ethernet and 4-port 10 Gb Ethernet adapters	IBM Flex System 8-port 10 Gb converged adapter
Un-P1-C18-L1-T1					Chassis I/O bay 1	Chassis I/O bay 1
Un-P1-C18-L1-T2					Chassis I/O bay 2	Chassis I/O bay 2
Un-P1-C18-L1-T3						Chassis I/O bay 1
Un-P1-C18-L1-T4						Chassis I/O bay 2
Un-P1-C18-L2-T1					Chassis I/O bay 1	Chassis I/O bay 1
Un-P1-C18-L2-T2					Chassis I/O bay 2	Chassis I/O bay 2
Un-P1-C18-L2-T3*						Chassis I/O bay 1

Table 8. Mapping network adapter ports to IBM Flex System Enterprise Chassis I/O bays for the IBM Flex System p24L Compute Node (continued)

Port location code	IBM Flex System 2-port QDR InfiniBand adapter	IBM Flex System 2-port 10 Gb RoCE adapter	IBM Flex System 2-port 8 Gb and 2-port 16 Gb Fibre Channel adapter	IBM Flex System 4-port 16 Gb Fibre Channel adapter	IBM Flex System 4-port 1 Gb Ethernet and 4-port 10 Gb Ethernet adapters	IBM Flex System 8-port 10 Gb converged adapter
Un-P1-C18-L2-T4*						Chassis I/O bay 2
Un-P1-C19-L1-T1	Chassis I/O bay 3	Chassis I/O bay 3	Chassis I/O bay 3	Chassis I/O bay 3	Chassis I/O bay 3	Chassis I/O bay 3
Un-P1-C19-L1-T2			Chassis I/O bay 4	Chassis I/O bay 4	Chassis I/O bay 4	Chassis I/O bay 4
Un-P1-C19-L1-T3						Chassis I/O bay 3
Un-P1-C19-L1-T4						Chassis I/O bay 4
Un-P1-C19-L2-T1	Chassis I/O bay 4	Chassis I/O bay 4		Chassis I/O bay 3	Chassis I/O bay 3	Chassis I/O bay 3
Un-P1-C19-L2-T2				Chassis I/O bay 4	Chassis I/O bay 4	Chassis I/O bay 4
Un-P1-C19-L2-T3*						Chassis I/O bay 3
Un-P1-C19-L2-T4*						Chassis I/O bay 4
For more information about port mapping, see <a href="http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8721.doc/configuring_io_modules.html">http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8721.doc/configuring_io_modules.html</a> .						

\* Ports L2-T3 and L2-T4 require switches that have the capability of 56 internal ports.

## Reference codes

Reference codes are diagnostic aids that help you determine the source of a hardware or operating system problem. To use reference codes effectively, use them in conjunction with other service and support procedures.

The IBM Flex System p24L Compute Node produces several types of codes.

**Progress codes:** The power-on self-test (POST) generates eight-digit status codes that are known as *checkpoints* or *progress codes*, which are recorded in the management-module event log. The checkpoints indicate which compute node resource is initializing.

**Error codes:** The First Failure Data Capture (FFDC) error checkers capture fault data, which the service processor then analyzes. For unrecoverable errors (UEs), for recoverable events that meet or exceed their service thresholds, and for fatal system errors, an unrecoverable checkstop service event triggers the service processor to analyze the error, log the system reference code (SRC), and turn on the system attention LED.

The service processor logs the nine-word, eight-digit per word error code in the IBM Flex System Enterprise Chassis management-module event log. Error codes are either *system reference codes (SRCs)* or *service request numbers (SRNs)*. A location code might also be included.

**Isolation procedures:** If the fault analysis does not determine a definitive cause, the service processor might indicate a fault isolation procedure that you can use to isolate the failing component.

## Viewing the codes

The IBM Flex System p24L Compute Node does not display checkpoints or error codes on the remote console.

If the POST detects a problem, a 9-word, 8-digit error code is logged in the IBM Flex System Enterprise Chassis management-module event log. A location code that identifies a component might also be included. See “Error logs” on page 413 for information about viewing the management-module event log.

Service request numbers can be viewed using the Linux service aid “diagela”, if it is installed.

## System reference codes (SRCs)

System reference codes indicate a server hardware or software problem that can originate in hardware, in firmware, or in the operating system.

A compute node component generates an error code when it detects a problem. An SRC identifies the component that generated the error code and describes the error. Use the SRC information to identify a list of possibly failing items and to find information about any additional isolation procedures.

The following table shows the syntax of a nine-word B700xxxx system reference code (SRC) as it might be displayed in the event log of the IBM Chassis Management Module (CMM). Additional information for the event can be viewed by clicking **more...** in the message field.

The first word of the SRC in this example is the message identifier B7001111. This example numbers each word after the first word to show relative word positions. The seventh word is the direct select address, which is 77777777 in the example.

Table 9. Nine-word SRC in the CMM event log

Severity	Source	Date	Message	Additional information for event
Critical	Blade_05	Jan 21, 2012 07:15 AM	Node SN#xxxxxxxxxxxx message: (System event) system hardware failure. more...	Firmware. Replace UNKNOWN (5008FECF <b>B7001111</b> 22222222 33333333 44444444 55555555 66666666 <b>77777777</b> 88888888 99999999)

Depending on your operating system and the utilities installed, error messages might also be stored in an operating system log. For more information, see the documentation that comes with the operating system.

Use ASMI to display the error and event logs. See Displaying error and event logs in the IBM Power Systems Hardware Information Center.

## **SRC formats**

SRCs are strings of either six or eight alphanumeric characters. The first two characters designate the reference code type.

The first characters indicate the type of error:

- 1xxxyyyy - System power control network (SPCN) error
- A1xxxyyy - Attention required (service processor)
- A2xxxyyy - Attention required (logical partition)
- A7xxxyyy - Attention required (Licensed Internal Code)
- AAxxxyyy - Attention required (Partition firmware)
- B1xxxyyy - Service processor error, such as a boot problem
- B2xxxyyy - Logical partition error
- B7xxxyyy - Licensed Internal Code error
- BAxxxyyy - Partition firmware error
- Cxxxyyy - Checkpoint (must hang to indicate an error)
- Dxxxyyy - Dump checkpoint (must hang to indicate an error)

To find a description of an SRC that is not listed in this IBM Flex System p24L Compute Node documentation, refer to the POWER7 Reference Code Lookup page at <http://publib.boulder.ibm.com/infocenter/systems/scope/hw/index.jsp?topic=/ipha8/codefinder.htm>.

### **1xxxyyyy SRCs:**

The 1xxxyyyy system reference codes are system power control network (SPCN) reference codes.

Find the system reference code in the list below. Follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

**110000AC**

**Explanation:** The 110000AC SRC indicates your compute node lost ac power. This procedure will help you determine the source of the power loss condition that brought you here. If the system or expansion unit that exhibited the power loss starts normally, or stays powered on after an ac power failure, replacement of parts might not be needed. This is likely caused by one of three scenarios: 1. If the compute node was disconnected with the power still on, this SRC will be generated. If the check log indicator remains on, it can be turned off through the management console (if available). 2. Power loss to the chassis. This can be caused by a brown-out or the failure of PDU(s). The SRC is generated by the compute node, but the problem is not local to the compute node. No compute node hardware requires replacement. 3. Power lost to the compute node slot only, but power remains on in the other compute nodes in the chassis. In this case a legitimate hardware fail is possible. Other power-related (1100xxxx) SRC's for the compute node are expected to further diagnose and isolate the problem.

**Response:** No action is required.

---

**110000AD**

**Explanation:** Informational message: A service processor reset caused the server to power off.

**Response:** No action is required.

---

**11001F02**

**Explanation:** Informational message: The trace logs reached 1K of data.

**Response:** No action is required.

---

**11001F03**

**Explanation:** Informational message: Invalid TMS of location code.

**Response:** No action is required.

---

**11002600**

**Explanation:** Power good (pGood) master fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**11002610**

**Explanation:** pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.



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**11002620**

**Explanation:** 12V dc pGood input fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002622**

**Explanation:** Expansion\_Comp\_pGood\_fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002629**

**Explanation:** 1.5V reg\_pgood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**1100262B**

**Explanation:** 1.8V reg\_pgood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**1100262C**

**Explanation:** 5V reg\_pgood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

**1100262D**

**Explanation:** 3.3V reg\_pgood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**1100262E**

**Explanation:** 2.5V reg\_pgood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**1100262F**

**Explanation:** 1.0V power fault in the server.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**11002630**

**Explanation:** VRM CP0 core pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**11002632**

**Explanation:** VRM CP0 cache pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002640**

**Explanation:** VRM CP1 core pGood fault

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002642**

**Explanation:** VRM CP1 array pGood fault

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002647**

**Explanation:** 12V "or-ing" FET short.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002648**

**Explanation:** Server power latch fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002649**

**Explanation:** Server power fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

**1100265A**

**Explanation:** 1.2VA pGood fault

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**11002671**

**Explanation:** 12V power fault in the server.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**11002672**

**Explanation:** CFFh expansion card voltage alert.

**Response:** Perform the DTRCARD symbolic CRU isolation procedure by completing the following steps:

1. Reseat the PCIe expansion card.
2. If the problem persists, replace the expansion card.
3. If the problem persists, go to the Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
4. If the problem persists, replace the system-board into which the expansion card was plugged.

The DTRCARD symbolic CRU isolation procedure is in Service processor problems.

---

**11002673**

**Explanation:** Standby power fault on one of the system-boards in the server.

**Response:**

1. Check the management module event log for entries that indicate a power problem with the chassis unit.
2. Resolve any problems.
3. Remove the server from the chassis, then reinsert it.
4. Power on the server.
5. Monitor the server operation to verify that the problem is solved.
6. If the chassis unit is functioning normally, but the problem persists, replace the system board specified by the location code that was reported with the SRC.

---

**11002674**

**Explanation:** Expansion server pGood fault at standby.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the expansion system-board (Un-P2) assembly, as described in Removing the expansion unit.

---

**11002675**

**Explanation:** 1.1 Reg\_CPU0\_P5IO2C\_Vio\_pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002676**

**Explanation:** VTTA/B pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002678**

**Explanation:** PROC\_Vmem\_controller\_pGood 1.0V. fault

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**11002679**

**Explanation:** Vmem\_controller\_pGood 1.5V reg. fault

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

**1100267A**

**Explanation:** CFFh expansion card A0\_pGood fault.

**Response:** Perform the DTRCARD symbolic CRU isolation procedure by completing the following steps:

1. Reseat the PCIe expansion card.
2. If the problem persists, replace the expansion card.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
4. Replace the system board into which the expansion card is plugged.

The DTRCARD symbolic CRU isolation procedure is in Service processor problems.

---

**1100267B**

**Explanation:** CFFh expansion card B0\_pGood fault.

**Response:** Perform the DTRCARD symbolic CRU isolation procedure by completing the following steps:

1. Reseat the PCIe expansion card.
2. If the problem persists, replace the expansion card.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
4. Replace the system board into which the expansion card is plugged.

The DTRCARD symbolic CRU isolation procedure is in Service processor problems.

---

**1100267C**

**Explanation:** REG\_P5IO2C\_core 1.2V pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**1100267D**

**Explanation:** 2.0\_PLL\_pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**1100267F**

**Explanation:** ETE daughter card pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the ETE daughter card.

---

**1100269C**

**Explanation:** 1.2V A pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**1100269D**

**Explanation:** 1.2V B pGood fault.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

---

**110026DA**

**Explanation:** pGood fault on the expansion system board.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Perform the following:
  - a. Replace the expansion system board assembly, as described in Removing the expansion unit.

---

**11002900**

**Explanation:** SSD drive or SSD interposer card 3.3V pGood fault on the server board.

**Response:**

1. On a single-wide server, replace the following, one at a time, until the failure is no longer detected:
  - a. The SSD interposer card
  - b. The first SSD drive
  - c. The second SSD drive
2. On a double-wide server, replace the following, one at a time, until the failure is no longer detected:
  - a. The SSD interposer card on the expansion planar
  - b. The first SSD drive on the expansion planar
  - c. The second SSD drive on the expansion planar

**11002901**

**Explanation:** SSD interposer card pGood fault on the base system board.

**Response:**

1. Replace the interposer card on the base system board.
- 

**11002902**

**Explanation:** SSD drive power-on self-test failure on the base system board

**Response:** Perform one of the following:

- Replace the first SSD drive on the base system board.
  - Replace the second SSD drive on the base system board.
- 

**11002910**

**Explanation:** SSD drive or SSD interposer card 3.3V pGood fault on the expansion system board.

**Response:**

1. Replace the following, one at a time, until the failure is no longer detected:
    - a. The SSD interposer card on the expansion system board
    - b. The first SSD drive on the expansion system board
    - c. The second SSD drive on the expansion system board
- 

**11002911**

**Explanation:** SSD interposer card pGood fault on the expansion system board

**Response:**

1. Replace the interposer card on the expansion system board.
- 

**11002912**

**Explanation:** SSD drive power-on self-test failure.

**Response:** Perform one of the following:

- Replace the first SSD drive on the expansion system board.
  - Replace the second SSD drive on the expansion system board.
- 

**11003118**

**Explanation:** Thermal sensor read error.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. If this is an IBM Flex System p260 or p24L compute node, replace the light path diagnostics panel. If this is an IBM Flex System p460 compute node, check word 3 of the SRC. If word 3 is 00003100, the thermal sensor in the first bay is failing; replace the light path diagnostics panel. If word 3 is 00003101, the thermal sensor in the second bay is failing; replace the thermal sensor in the second bay of the compute node. For all other servers, replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.



---

**11003134**

**Explanation:** Fault on the hardware monitoring chip.

**Response:** Perform the DTRCARD symbolic CRU isolation procedure by completing the following steps:

1. Reseat the PCIe expansion card.
2. If the problem persists, replace the expansion card.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
4. Replace the system board into which the PCI card is plugged.

The DTRCARD symbolic CRU isolation procedure is in Service processor problems.

---

**11008400**

**Explanation:** Invalid configuration decode.

**Response:**

1. Check for server firmware updates.
  2. Apply any available updates.
  3. If the problem persists:
    - a. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
    - b. Replace the base system board, as described in Replacing the system-board and chassis assembly.
- 

**11008402**

**Explanation:** Unable to get VPD from the concentrator.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the base system-board, as described in Replacing the system-board and chassis assembly.
- 

**11008413**

**Explanation:** Invalid processor 1 VPD.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.

**11008414**

**Explanation:** Invalid processor 2 VPD.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**11008423**

**Explanation:** No processor VPD was found.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the base system-board, as described in Replacing the system-board and chassis assembly.
- 

**11008447**

**Explanation:** SSD interposer card pGood fault on the system board.

**Response:**

1. Replace the interposer card specified by the location code in the error log entry.
- 

**11008480**

**Explanation:** Bad or missing memory controller.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
  2. Replace the system board. If there is more than one system board, use the location code in the SRC to identify which system board to replace.
- 

**110084A0**

**Explanation:** No backplane VPD was found.

**Response:**

1. Check for server firmware updates.
2. Apply any available updates.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
4. Replace the base system-board, as described in Replacing the system-board and chassis assembly.

**A1xyyyy service processor SRCs:**

An A1xyyyy system reference code (SRC) is an attention code that offers information about a platform or service processor dump or confirms a control panel function request. Only when you experience a hang condition should you take any of the actions described for an attention code.

If the system hangs on an attention code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

---

**A1XXYYYY**

**Explanation:** Attention code

**Response:**

1. Go to Checkout procedure.
2. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**A2xyyyy logical partition SRCs:**

An A2xyyyy SRC is a logical partition reference code that is related to logical partitioning.

---

**A2D03000**

**Explanation:** User-initiated immediate termination and MSD of a partition.

**Response:** No corrective action is required.

---

**A2D03001**

**Explanation:** User-initiated RSCDUMP of RPA partition's PFW content.

**Response:** No corrective action is required.

---

**A2D03002**

**Explanation:** User-initiated RSCDUMP of IBM i partition's SLIC bootloader and PFW content.

**Response:** No corrective action is required.

---

**A2XXYYYY**

**Explanation:** See the description for the B200yyyy error code with the same yyyy value.

**Response:** Perform the action described in the B200yyyy error code with the same yyyy value.

## A700173C • A7004721

### A7xyyyy licensed internal code SRCs:

An A7xyyyy system reference code (SRC) is an error/event code that is related to licensed internal code.

---

#### A700173C

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

#### A7003000

**Explanation:** A user-initiated platform dump occurred.

**Response:** No service action required.

---

#### A7004700

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

#### A7004712

**Explanation:** A problem occurred when initializing, reading, or using system VPD.

**Response:** Replace the management card, as described in Removing the management card and Installing the management card.

---

#### A7004713

**Explanation:** A problem occurred when initializing, reading, or using system VPD.

**Response:** Replace the management card, as described in Removing the management card and Installing the management card.

---

#### A7004715

**Explanation:** A problem occurred when initializing, reading, or using system VPD.

**Response:** Replace the management card, as described in Removing the management card and Installing the management card.

---

#### A7004721

**Explanation:** The World Wide Port Name (WWPN) Prefix is not valid.

**Response:** Refer to <https://www-912.ibm.com/supporthome.nsf/document/51455410>

---

**A7004730**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**A7004740**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**A7004741**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**A700474A**

**Explanation:** System has Active Memory Mirroring (AMM) ON, but is not licensed for AMM use

**Response:** The management interfaces have been used to set AMM to "ON" for the system. However, at IPL time, the system does not have a valid license for AMM. The customer needs to contact IBM or a Partner Sales representative to purchase and enter an Activation Code for this feature. If this is not possible, then turn off the system; use the management interfaces to turn AMM "OFF"; and re-IPL.

---

**A7004788**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**A70047FF**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**A700YYYY**

**Explanation:** For any other A7xyyyy SRC not listed here, see the description for the B7xyyyy error code with the same xyyyy value.

**Response:** Perform the action in the B7xyyyy error code with the same xyyyy value.

---

**A7013003**

**Explanation:** Partition-initiated PHYP-content RSCDUMP.

**Response:** No corrective action is required.

---

**AAxxyyyy partition firmware attention codes:**

AAxxyyyy attention codes provide information about the next target state for the platform firmware. These codes might indicate that you need to perform an action.

The AAxxyyyy SRCs below are the partition firmware codes that might be displayed if the POST detects a problem. Follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, then you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

---

**AA00E1A8**

**Explanation:** The system is booting to the open firmware prompt.

**Response:** At the open firmware prompt, type `dev /packages/gui obe` and press Enter; then, type 1 to select SMS Menu.

---

**AA00E1A9**

**Explanation:** The system is booting to the System Management Services (SMS) menus.

**Response:**

1. If the system or partition returns to the SMS menus after a boot attempt failed, use the SMS menus to check the progress indicator history for a `BAXx xxxx` error, which may indicate why the boot attempt failed. Follow the actions for that error code to resolve the boot problem.
2. Use the SMS menus to establish the boot list and restart the server.

---

**AA00E1B0**

**Explanation:** Waiting for the user to select the language and keyboard. The menu should be visible on the console.

**Response:**

1. Check for server firmware updates.
2. Apply any available updates.
3. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**AA00E1B1**

**Explanation:** Waiting for the user to accept or decline the license

**Response:**

1. Check for server firmware updates.
2. Apply any available updates.
3. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**AA060007**

**Explanation:** A keyboard was not found.

**Response:** Verify that a keyboard is attached to the USB port that is assigned to the partition.

---

**AA06000B**

**Explanation:** The system or partition was not able to find an operating system on any of the devices in the boot list.

**Response:**

1. Use the SMS menus to modify the boot list so that it includes devices that have a known-good operating system and restart the server.
  2. If the problem remains, go to Boot problem resolution.
- 

**AA06000C**

**Explanation:** The media in a device in the boot list was not bootable.

**Response:**

1. Replace the media in the device with known-good media or modify the boot list to boot from another bootable device.
  2. If the problem remains, go to Boot problem resolution.
- 

**AA06000D**

**Explanation:** The media in the device in the bootlist was not found under the I/O adapter specified by the bootlist.

**Response:**

1. Verify that the media from which you are trying to boot is bootable or modify the boot list to boot from another bootable device.
  2. If the problem remains, go to Boot problem resolution.
- 

**AA06000E**

**Explanation:** The adapter specified in the boot list is not present or is not functioning.

**Response:**

- For an AIX operating system:
  1. Try booting the server from another bootable device; then, run AIX online diagnostics against the failing adapter.
  2. If AIX cannot be booted from another device, boot the server using the stand-alone diagnostics CD or a NIM server; then, run diagnostics against the failing adapter.
- For a Linux operating system, boot the server using the stand-alone diagnostics CD or a NIM server; then, run diagnostics against the failing adapter.

**AA060011**

**Explanation:** The firmware did not find an operating system image and at least one hard disk in the boot list was not detected by the firmware. The firmware is retrying the entries in the boot list.

**Response:** This might occur if a disk enclosure that contains the boot disk is not fully initialized or if the boot disk belongs to another partition. Verify that:

- The boot disk belongs to the partition from which you are trying to boot.
  - The boot list in the SMS menus is correct.
- 

**AA130013**

**Explanation:** Bootable media is missing from a USB CD-ROM

**Response:** Verify that a bootable CD is properly inserted in the CD or DVD drive and retry the boot operation.

---

**AA130014**

**Explanation:** The media in a USB CD-ROM has changed.

**Response:**

1. Retry the operation.
  2. Check for server firmware updates; then, install the updates if available and retry the operation.
- 

**AA170210**

**Explanation:** Setenv/\$setenv parameter error - the name contains a null character.

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**AA170211**

**Explanation:** Setenv/\$setenv parameter error - the value contains a null character.

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**AA190001**

**Explanation:** The hypervisor function to get or set the time-of-day clock reported an error.

**Response:**

1. Use the operating system to set the system clock.
  2. If the problem persists, check for server firmware updates.
  3. Install any available updates and retry the operation.
-



---

**AA260001**

**Explanation:** Enter the Type Model Number (Must be 8 characters)

**Response:** Enter the machine type and model of the server at the prompt.

---

**AA260002**

**Explanation:** Enter the Serial Number (Must be 7 characters)

**Response:** Enter the serial number of the server at the prompt.

---

**AA260003**

**Explanation:** Enter System Unique ID (Must be 12 characters)

**Response:** Enter the system unique ID number at the prompt.

---

**AA260004**

**Explanation:** Enter WorldWide Port Number (Must be 12 characters)

**Response:** Enter the worldwide port number of the server at the prompt.

---

**AA260005**

**Explanation:** Enter Brand (Must be 2 characters)

**Response:** Enter the brand number of the server at the prompt.

---

**B1xyyyy service processor SRCs:**

A B1xyyyy system reference code (SRC) is an error code that is related to an event or exception that occurred in the service processor firmware.

To find a description of an SRC that is not listed in this IBM Flex System p24L Compute Node documentation, refer to the POWER7 Reference Code Lookup page at <http://publib.boulder.ibm.com/infocenter/systems/scope/hw/index.jsp?topic=/ipha8/codefinder.htm>.

**Note:** For problems persisting after completing the suggested actions, see “Solving undetermined problems” on page 457.

---

**B15611A9**

**Explanation:** The service processor could not communicate with the Chassis Management Module.

**Response:** Go to Reseating the compute node in a chassis.

---

### B15611B1

**Explanation:** The service processor could not communicate with the Chassis Management Module.

**Response:** Go to Reseating the compute node in a chassis.

---

### B15611B9

**Explanation:** The service processor could not communicate with the Chassis Management Module.

**Response:** Go to Reseating the compute node in a chassis.

---

### B15611BA

**Explanation:** The service processor could not communicate with the Chassis Management Module.

**Response:** Go to Reseating the compute node in a chassis.

---

### B1768BBF

**Explanation:** During the configuration of the second interface connection, the service processor detected that the interface is not connected to an active CMM.

**Response:** If a service processor reset to factory default was performed or if this is a tracking event, no service actions are required. Otherwise, use the FRU and procedure callouts detailed with the SRC to determine service actions.

---

### B1817200

**Explanation:** Invalid boot request

**Response:** Go to Checkout procedure.

---

### B1817201

**Explanation:** Service processor failure

**Response:** Go to Checkout procedure.

---

### B1817202

**Explanation:** The permanent and temporary firmware sides are both marked invalid

**Response:** Go to Checkout procedure.

---

### B1817203

**Explanation:** Error setting boot parameters

**Response:** Go to Checkout procedure.

---

---

**B1817204**

**Explanation:** Error reading boot parameters

**Response:** Go to Checkout procedure.

---

**B1817205**

**Explanation:** Boot code error

**Response:** Go to Checkout procedure.

---

**B1817206**

**Explanation:** Unit check timer was reset

**Response:** Go to Checkout procedure.

---

**B1817207**

**Explanation:** Error reading from NVRAM

**Response:** Go to Checkout procedure.

---

**B1817208**

**Explanation:** Error writing to NVRAM

**Response:** Go to Checkout procedure.

---

**B1817209**

**Explanation:** The service processor boot watchdog timer expired and forced the service processor to attempt a boot from the other firmware image in the service processor flash memory

**Response:** Go to Checkout procedure.

---

**B181720A**

**Explanation:** Power-off reset occurred. FipsDump should be analyzed: Possible software problem

**Response:** Go to Checkout procedure.

---

**B1818BC1**

**Explanation:** The service processor reset failed to resolve a communication failure with the Chassis Management Module. The service processor is no longer accessible.

**Response:** Perform the following actions one at a time until the problem is resolved:

1. Reseat the compute node.
2. Move the compute node to a different location in the chassis.
3. Perform a firmware update. See Updating the firmware.

If these actions do not resolve the problem, contact your next level of support. Reseating the compute node in a chassis

---

**B1818BC2**

**Explanation:** The service processor was reset due to a communication failure with the Chassis Management Module.

**Response:** If this is tracking event, no service action is required. Otherwise look for Chassis Management Module problems and resolve them.

---

**B181D548**

**Explanation:** An informational event was generated on the service processor.

**Response:** This is an informational tracking event and no service action is required.

**B2xyyyyy logical partition SRCs:**

A B2xyyyyy SRC is a logical partition reference code that is related to logical partitioning.

The B2xyyyyy SRCs below are the system reference codes that might be displayed if system firmware detects a problem. Follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, then you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

**Note:** For problems persisting after completing the suggested actions, see “Checkout procedure” on page 414 and “Solving undetermined problems” on page 457.

---

**B2001020**

**Explanation:** Firmware for the specified function cannot be loaded

The firmware resource and all associated virtual and/or physical devices will not be available until the issue is resolved.

**Response:** Collect a platform dump and then go to Isolating firmware problems.

---

**B2001130**

**Explanation:** A problem occurred during the migration of a partition

You attempted to migrate a partition to a system that has a power or thermal problem. The migration will not continue.

**Response:** Look for and fix power or thermal problems and then retry the migration.

---

**B2001131**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

---

**B2001132**

**Explanation:** A problem occurred during the startup of a partition.

A platform firmware error occurred while it was trying to allocate memory. The startup will not continue.

**Response:** Collect a platform dump and then go to Isolating firmware problems.

---

**B2001133**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001134**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001140**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001141**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001142**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001143**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001144**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001148**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001150**

**Explanation:** During the startup of a partition, a partitioning configuration problem occurred.

**Response:** Go to Verifying the partition configuration.

---

**B2001151**

**Explanation:** A problem occurred during the migration of a partition.

The migration of a partition did not complete.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2001170**

**Explanation:** During the startup of a partition, a failure occurred due to a validation error.

**Response:** Go to Verifying the partition configuration.

---

**B2001225**

**Explanation:** A problem occurred during the startup of a partition.

The partition attempted to start up prior to the platform fully initializing. Restart the partition after the platform has fully completed and the platform is not in standby mode.

**Response:** Restart the partition.

---

**B2001230**

**Explanation:** During the startup of a partition, a partitioning configuration problem occurred; the partition is lacking the necessary resources to start up.

**Response:** Go to Verifying the partition configuration.

---

---

**B2001260**

**Explanation:** A problem occurred during the startup of a partition.

The partition could not start at the Timed Power On setting because the partition was not set to Normal.

**Response:** Set the partition to Normal.

---

**B2001265**

**Explanation:** The partition could not start up. An operating system Main Storage Dump startup was attempted with the startup side on D-mode, which is not a valid operating system startup scenario. The startup will be halted. This SRC can occur when a D-mode SLIC installation fails and attempts a Main Storage Dump.

**Response:** Correct the startup settings.

---

**B2001266**

**Explanation:** The partition could not start up. You are attempting to start up an operating system that is not supported.

**Response:** Install a supported operating system and restart the partition.

---

**B2001280**

**Explanation:** A problem occurred during a partition Main Storage Dump. A mainstore dump startup did not complete due to a configuration mismatch.

**Response:** Go to Isolating firmware problems.

---

**B2001281**

**Explanation:** A partition memory error occurred. The failed memory will no longer be used.

**Response:** Restart the partition.

---

**B2001282**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Go to Isolating firmware problems.

---

**B2001320**

**Explanation:** A problem occurred during the startup of a partition.

No default load source was selected. The startup will attempt to continue, but there may not be enough information to find the correct load source.

**Response:** Configure a load source for the partition. Then restart the partition.

---

**B2001321**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Verify that the correct slot is specified for the load source. Then restart the partition.

---

**B2001322**

**Explanation:** In the partition startup, code failed during a check of the load source path.

**Response:** Verify that the path for the load source is specified correctly. Then restart the partition.

---

**B2002048**

**Explanation:** A problem occurred during a partition Main Storage Dump. A mainstore dump startup did not complete due to a copy error.

**Response:** Go to Isolating firmware problems.

---

**B2002054**

**Explanation:** A problem occurred during a partition Main Storage Dump. A mainstore dump IPL did not complete due to a configuration mismatch.

**Response:** Go to Isolating firmware problems.

---

**B2002058**

**Explanation:** A problem occurred during a partition Main Storage Dump. A mainstore dump startup did not complete due to a copy error.

**Response:** Go to Isolating firmware problems.

---

**B2002210**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2002220**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2002250**

**Explanation:** During the startup of a partition, an attempt to toggle the power state of a slot has failed.

**Response:** Check for server firmware updates; then, install the updates if available.

---



---

**B2002260**

**Explanation:** During the startup of a partition, the partition firmware attempted an operation that failed.

**Response:** Go to Isolating firmware problems.

---

**B2002300**

**Explanation:** During the startup of a partition, an attempt to toggle the power state of a slot has failed.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2002310**

**Explanation:** During the startup of a partition, the partition firmware attempted an operation that failed.

**Response:** Go to Isolating firmware problems.

---

**B2002320**

**Explanation:** During the startup of a partition, the partition firmware attempted an operation that failed.

**Response:** Go to Isolating firmware problems.

---

**B2002425**

**Explanation:** During the startup of a partition, the partition firmware attempted an operation that failed.

**Response:** Go to Isolating firmware problems.

---

**B2002426**

**Explanation:** During the startup of a partition, the partition firmware attempted an operation that failed.

**Response:** Go to Isolating firmware problems.

---

**B2002475**

**Explanation:** During the startup of a partition, a slot that was needed for the partition was either empty or the device in the slot has failed.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2002485**

**Explanation:** During the startup of a partition, the partition firmware attempted an operation that failed.

**Response:** Go to Isolating firmware problems.

---

---

**B2003000**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003081**

**Explanation:** During the startup of a partition, the startup did not complete due to a copy error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2003084**

**Explanation:** A problem occurred during the startup of a partition.

The adapter type might not be supported.

**Response:** Verify that the adapter type is supported.

---

**B2003088**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200308C**

**Explanation:** A problem occurred during the startup of a partition.

The adapter type cannot be determined.

**Response:** Verify that a valid I/O Load Source is tagged.

---

**B2003090**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Go to Isolating firmware problems.

---

**B2003110**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Go to Isolating firmware problems.

---

**B2003113**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Look for B7xx xxxx errors and resolve them.

---

---

**B2003114**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Look for other errors and resolve them.

---

**B2003120**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003123**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003125**

**Explanation:** During the startup of a partition, the server firmware could not obtain a segment of main storage within the server to use for managing the creation of a partition.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2003128**

**Explanation:** A problem occurred during the startup of a partition. A return code for an unexpected failure was returned when attempting to query the load source path.

**Response:** Look for and resolve B700 69xx errors.

---

**B2003130**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2003135**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2003140**

**Explanation:** A problem occurred during the startup of a partition. This is a configuration problem in the partition.

**Response:** Reconfigure the partition to include the intended load source path.

---

---

**B2003141**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003142**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003143**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003144**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003145**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2003200**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2004158**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2004400**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2005106**

**Explanation:** A problem occurred during the startup of a partition. There is not enough space to contain the partition main storage dump. The startup will not continue.

**Response:** Verify that there is sufficient memory available to start the partition as it is configured. If there is already enough memory, then go to Isolating firmware problems.

---

**B2005109**

**Explanation:** A problem occurred during the startup of a partition. There was a partition main storage dump problem. The startup will not continue.

**Response:** Go to Isolating firmware problems.

---

**B2005114**

**Explanation:** A problem occurred during the startup of a partition. There is not enough space to contain the partition main storage dump. The startup will not continue.

**Response:** Go to Isolating firmware problems.

---

**B2005115**

**Explanation:** A problem occurred during the startup of a partition. There was an error reading the partition main storage dump from the partition load source into main storage. The startup will attempt to continue.

**Response:** If the startup does not continue, look for and resolve other errors.

---

**B2005117**

**Explanation:** A problem occurred during the startup of a partition. A partition main storage dump has occurred but cannot be written to the load source device because a valid dump already exists.

**Response:** Use the Main Storage Dump Manager to rename or copy the current main storage dump.

---

**B2005121**

**Explanation:** A problem occurred during the startup of a partition. There was an error writing the partition main storage dump to the partition load source. The startup will not continue.

**Response:** Look for related errors in the "Product Activity Log" and fix any problems found. Use virtual control panel function 34 to retry the current Main Store Dump startup while the partition is still in the failed state.

---

**B2005122**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

---

**B2005123**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2005127**

**Explanation:** Timeout occurred during a main store dump IPL.

**Response:** There was not enough memory available for the dump to complete before the timeout occurred. Retry the main store dump IPL, or else power on the partition normally.

---

**B2005135**

**Explanation:** A problem occurred during the startup of a partition. There was an error writing the partition main storage dump to the partition load source. The main store dump startup will continue.

**Response:** Look for other errors and resolve them.

---

**B2005137**

**Explanation:** A problem occurred during the startup of a partition. There was an error writing the partition main storage dump to the partition load source. The main store dump startup will continue.

**Response:** Look for other errors and resolve them.

---

**B2005145**

**Explanation:** A problem occurred during the startup of a partition. There was an error writing the partition main storage dump to the partition load source. The main store dump startup will continue.

**Response:** Look for other errors and resolve them.

---

**B2005148**

**Explanation:** A problem occurred during the startup of a partition. An error occurred while doing a main storage dump that would have caused another main storage dump. The startup will not continue.

**Response:** Go to Isolating firmware problems.

---

**B2005149**

**Explanation:** A problem occurred during the startup of a partition while doing a Firmware Assisted Dump that would have caused another Firmware Assisted Dump.

**Response:** Check for server firmware updates; then, install the updates if available.

---

---

**B200514A**

**Explanation:** A Firmware Assisted Dump did not complete due to a copy error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200542A**

**Explanation:** A Firmware Assisted Dump did not complete due to a read error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200542B**

**Explanation:** A Firmware Assisted Dump did not complete due to a copy error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200543A**

**Explanation:** A Firmware Assisted Dump did not complete due to a copy error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200543B**

**Explanation:** A Firmware Assisted Dump did not complete due to a copy error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200543C**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200543D**

**Explanation:** A Firmware Assisted Dump did not complete due to a copy error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2006003**

**Explanation:** Firmware for the specified function cannot be loaded.

The firmware resource and all associated virtual and/or physical devices will not be available until the issue is resolved.

**Response:** Collect a platform dump and then go to Isolating firmware problems.

---

---

**B2006006**

**Explanation:** During the startup of a partition, a system firmware error occurred when the partition memory was being initialized; the startup will not continue.

**Response:** Go to Isolating firmware problems.

---

**B2006008**

**Explanation:** During the IPL of the partition, an error was detected while trying to setup the partition for firmware use.

The IPL of the partition will not continue.

**Response:** Contact IBM support.

---

**B2006009**

**Explanation:** An active memory sharing partition is attempting to use a paging space device for which it does not have ownership.

**Response:** Verify that the paging space device is not in use by another CEC, and then follow the instructions below to initialize the paging space device. 1) Power off the partition. 2) Verify that the paging device is not currently in another CEC's Reserved Pool. 3) Clear the paging space header of the hdisk assigned to the partition. 4) Remove the paging space from the Reserved Pool. 5) Add the just removed paging space back into the Reserved Pool. 6) Activate the partition.

---

**B200600A**

**Explanation:** A problem occurred during the startup of a partition. The partition could not reserve the memory required for IPL.

**Response:** Contact IBM support.

---

**B2006012**

**Explanation:** During the startup of a partition, the partition LID failed to completely load into the partition main storage area.

**Response:** Go to Isolating firmware problems.

---

**B2006015**

**Explanation:** A problem occurred during the startup of a partition. The load source media is corrupted or not valid.

**Response:** Replace the load source media.

---



---

**B2006025**

**Explanation:** A problem occurred during the startup of a partition. This is a problem with the load source media being corrupt or not valid.

**Response:** Replace the load source media.

---

**B2006027**

**Explanation:** During the startup of a partition, a failure occurred when allocating memory for an internal object used for firmware module load operations.

**Response:**

1. Make sure that enough main storage was allocated to the partition.
  2. Retry the operation.
- 

**B2006110**

**Explanation:** A problem occurred during the startup of a partition. There was an error on the load source device. The startup will attempt to continue.

**Response:** Look for other errors and resolve them.

---

**B200690A**

**Explanation:** During the startup of a partition, an error occurred while copying open firmware into the partition load area.

**Response:** Go to Isolating firmware problems.

---

**B2007200**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008080**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008081**

**Explanation:** During the startup of a partition, an internal firmware time-out occurred; the partition might continue to start up but it can experience problems while running.

**Response:** Check for server firmware updates; then, install the updates if available.

---

---

**B2008105**

**Explanation:** During the startup of a partition, there was a failure loading the VPD areas of the partition; the load source media has been corrupted or is unsupported on this server.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008106**

**Explanation:** A problem occurred during the startup of a partition. The startup will not continue.

**Response:** Replace the load source media.

---

**B2008107**

**Explanation:** During the startup of a partition, there was a problem getting a segment of main storage in the server main storage.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008109**

**Explanation:** During the startup of a partition, a failure occurred. The startup will not continue.

**Response:**

1. Make sure that there is enough memory to start up the partition.
  2. Check for server firmware updates; then, install the updates if available.
- 

**B2008111**

**Explanation:** A problem occurred during the startup of a partition.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008112**

**Explanation:** During the startup of a partition, a failure occurred; the startup will not continue.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008113**

**Explanation:** During the startup of a partition, an error occurred while mapping memory for the partition startup.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008114**

**Explanation:** During the startup of a partition, there was a failure verifying the VPD for the partition resources during startup.

**Response:** Check for server firmware updates; then, install the updates if available.

---

---

**B2008115**

**Explanation:** During the startup of a partition, there was a low level partition-to-partition communication failure.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008117**

**Explanation:** During the startup of a partition, the partition did not start up due to a system firmware error.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B2008121**

**Explanation:** During the startup of a partition, the partition did not start up due to a system firmware error.

**Response:** Go to Isolating firmware problems.

---

**B2008123**

**Explanation:** During the startup of a partition, the partition did not start up due to a system firmware error.

**Response:** Go to Isolating firmware problems.

---

**B2008125**

**Explanation:** During the startup of a partition, the partition did not start up due to a system firmware error.

**Response:** Go to Isolating firmware problems.

---

**B2008127**

**Explanation:** During the startup of a partition, the partition did not start up due to a system firmware error.

**Response:** Go to Isolating firmware problems.

---

**B2008129**

**Explanation:** During the startup of a partition, the partition did not start up due to a system firmware error.

**Response:** Go to Isolating firmware problems.

---

**B200813A**

**Explanation:** There was a problem establishing a console.

**Response:** Go to Isolating firmware problems.

---

---

**B2008140**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008141**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008142**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008143**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008144**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008145**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2008150**

**Explanation:** System firmware detected an error.

**Response:** Collect a platform dump and then go to Isolating firmware problems.

---

**B2008151**

**Explanation:** System firmware detected an error.

**Response:** Use the management console to increase the Logical Memory Block (LMB) size, and to reduce the number of virtual devices for the partition.

---

**B2008152**

**Explanation:** No active system processors.

**Response:** Verify that processor resources are assigned to the partition.

---

**B2008160**

**Explanation:** A problem occurred during the migration of a partition.

**Response:** Contact IBM support.

---

**B2008161**

**Explanation:** A problem occurred during the migration of a partition.

**Response:** Contact IBM support.

---

**B200A100**

**Explanation:** A partition ended abnormally; the partition could not stay running and shut itself down.

**Response:**

1. Check the error logs and take the actions for the error codes that are found.
  2. Go to Isolating firmware problems.
- 

**B200A101**

**Explanation:** A partition ended abnormally; the partition could not stay running and shut itself down.

**Response:**

1. Check the error logs and take the actions for the error codes that are found.
  2. Go to Isolating firmware problems.
- 

**B200A140**

**Explanation:** A lower priority partition lost a usable processor to supply it to a higher priority partition with a bad processor.

**Response:** Evaluate the entire LPAR configuration. Adjust partition profiles with the new number of processors available in the system.

---

**B200B07B**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

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---

**B200B215**

**Explanation:** A problem occurred after a partition ended abnormally.

There was a communications problem between this partition's service processor and the platform's service processor.

**Response:** Restart the platform.

---

**B200C1F0**

**Explanation:** An internal system firmware error occurred during a partition shutdown or a restart.

**Response:** Go to Isolating firmware problems.

---

**B200D150**

**Explanation:** A partition ended abnormally; there was a communications problem between this partition and the code that handles resource allocation.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200E0AA**

**Explanation:** A problem occurred during the power off of a partition.

**Response:** Go to Isolating firmware problems.

---

**B200F001**

**Explanation:** A problem occurred during the startup of a partition. An operation has timed out.

**Response:** Look for other errors and resolve them.

---

**B200F003**

**Explanation:** During the startup of a partition, the partition processor(s) did not start the firmware within the time-out window.

**Response:** Collect the partition dump information; then, go to Isolating firmware problems.

---

**B200F004**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F005**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F006**

**Explanation:** During the startup of a partition, the code load operation for the partition startup timed out.

**Response:**

1. Check the error logs and take the actions for the error codes that are found.
2. Go to Isolating firmware problems.

---

**B200F007**

**Explanation:** During a shutdown of the partition, a time-out occurred while trying to stop a partition.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B200F008**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F009**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F00A**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F00B**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F00C**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B200F00D**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B2D03001**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

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**B2D03002**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

**B7xyyyyy licensed internal code SRCs:**

A B7xyyyyy system reference code (SRC) is an error code or event code that is related to licensed internal code.

The B7xyyyyy SRCs below are the system reference codes that might be displayed if system firmware detects a problem. Follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, then you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

**Note:** For problems persisting after completing the suggested actions, see “Checkout procedure” on page 414 and “Solving undetermined problems” on page 457.

---

**B7000102**

**Explanation:** System firmware detected an error. A machine check occurred during startup.

**Response:**

1. Collect the event log information.
  2. Go to Isolating firmware problems.
- 

**B7000103**

**Explanation:** System firmware detected a failure

**Response:**

1. Collect the event log information.
2. Collect the platform dump information.
3. Go to Isolating firmware problems.



---

**B7000104**

**Explanation:** System firmware failure. Machine check, undefined error occurred.

**Response:**

1. Check for server firmware updates.
2. Update the firmware.

---

**B7000105**

**Explanation:** System firmware detected an error. More than one request to terminate the system was issued.

**Response:** Go to Isolating firmware problems.

---

**B7000106**

**Explanation:** System firmware failure.

**Response:**

1. Collect the event log information.
2. Collect the platform dump information.
3. Go to Isolating firmware problems.

---

**B7000107**

**Explanation:** System firmware failure. The system detected an unrecoverable machine check condition.

**Response:**

1. Collect the event log information.
2. Collect the platform dump information.
3. Go to Isolating firmware problems.

---

**B7000200**

**Explanation:** System firmware has experienced a low storage condition

**Response:** No immediate action is necessary.

Continue running the system normally. At the earliest convenient time or service window, work with IBM Support to collect a platform dump and restart the system; then, go to Isolating firmware problems.

---

**B7000201**

**Explanation:** System firmware detected an error.

**Response:** No immediate action is necessary.

Continue running the system normally. At the earliest convenient time or service window, work with IBM Support to collect a platform dump and restart the system; then, go to Isolating firmware problems.

---

**B7000202**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7000302**

**Explanation:** System firmware failure

**Response:**

1. Collect the platform dump information.
  2. Go to Isolating firmware problems.
- 

**B7000441**

**Explanation:** Service processor failure. The platform encountered an error early in the startup or termination process.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7000443**

**Explanation:** Service processor failure.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7000601**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

Note: This code and associated data can be used to determine why the time of day for a partition was lost.

---

**B7000602**

**Explanation:** System firmware detected an error condition.

**Response:**

1. Collect the event log information.
2. Go to Isolating firmware problems.

---

**B7000611**

**Explanation:** There is a problem with the system hardware clock; the clock time is invalid.

**Response:** Use the operating system to set the system clock.

---

**B7000621**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7000641**

**Explanation:** System firmware detected an error.

**Response:**

1. Collect the platform dump information.
  2. Go to Isolating firmware problems.
- 

**B7000650**

**Explanation:** System firmware detected an error. Resource management was unable to allocate main storage. A platform dump was initiated.

**Response:**

1. Collect the event log.
  2. Collect the platform dump data.
  3. Collect the partition configuration information.
  4. Go to Isolating firmware problems.
- 

**B7000651**

**Explanation:** The system detected an error in the system clock hardware

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7000803**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7000804**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

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## B7000A00 • B7001161

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### B7000A00

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

### B7000A01

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

### B7000A10

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

### B7001150

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

### B7001151

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

### B7001152

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

### B7001160

**Explanation:** Service processor failure

**Response:**

1. Go to Isolating firmware problems.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### B7001161

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7001730**

**Explanation:** The VPD for the system is not what was expected at startup.

**Response:** Replace the management card, as described in Removing the management card and Installing the management card.

---

**B7001731**

**Explanation:** The VPD on a memory DIMM is not correct and the memory on the DIMM cannot be used, resulting in reduced memory.

**Response:** Replace the MEMDIMM symbolic CRU, as described in Service processor problems.

---

**B7001732**

**Explanation:** The VPD on a processor card is not correct and the processor card cannot be used, resulting in reduced processing power.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7001733**

**Explanation:** System firmware failure. The startup will not continue.

**Response:** Look for and correct B1xxxxxx errors. If there are no serviceable B1xxxxxx errors, or if correcting the errors does not correct the problem, contact IBM support to reset the server firmware settings.

Attention: Resetting the server firmware settings results in the loss of all of the partition data that is stored on the service processor. Before continuing with this operation, manually record all settings that you intend to preserve.

The service processor reboots after IBM Support resets the server firmware settings.

If the problem persists, Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**B700173A**

**Explanation:** A VPD collection overflow occurred.

**Response:**

1. Look for and resolve other errors.
2. If there are no other errors:
  - a. Update the firmware to the current level, as described in Updating the firmware.
  - b. You might also have to update the Management Module firmware to a compatible level.

---

**B700173B**

**Explanation:** A system firmware failure occurred during VPD collection.

**Response:** Look for and correct other B1xxxxxx errors.

---

**B7004091**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7004400**

**Explanation:** There is a platform dump to collect

**Response:**

1. Collect the platform dump information.
  2. Go to Isolating firmware problems.
- 

**B7004401**

**Explanation:** System firmware failure. The system firmware detected an internal problem.

**Response:** Go to Isolating firmware problems.

---

**B7004402**

**Explanation:** A system firmware error occurred while attempting to allocate the memory necessary to create a platform dump.

**Response:** Go to Isolating firmware problems.

---

**B7004705**

**Explanation:** System firmware failure. A problem occurred when initializing, reading, or using the system VPD. The Capacity on Demand function is not available.

**Response:** Restart the system.

---

**B7004710**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7004714**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

---

**B7004715**

**Explanation:** A problem occurred when initializing, reading, or using system VPD.

**Response:** Replace the management card, as described in Removing the management card and Installing the management card.

---

**B7004750**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7004788**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B70047CB**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7005120**

**Explanation:** System firmware detected an error

**Response:** If the system is not exhibiting problematic behavior, you can ignore this error. Otherwise, go to Isolating firmware problems.

---

**B7005121**

**Explanation:** System firmware detected a programming problem for which a platform dump may have been initiated.

**Response:**

1. Collect the event log information.
  2. Collect the platform dump information.
  3. Go to Isolating firmware problems.
- 

**B7005122**

**Explanation:** An error occurred during a search for the load source.

**Response:** If the partition fails to startup, go to Isolating firmware problems. Otherwise, no corrective action is required.

---

**B7005123**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7005190**

**Explanation:** Operating system error. The server firmware detected a problem in an operating system.

**Response:** Check for error codes in the partition that is reporting the error and take the appropriate actions for those error codes.

---

**B7005191**

**Explanation:** System firmware detected a virtual I/O configuration error.

**Response:**

1. Use the management console to verify or reconfigure the invalid virtual I/O configuration.
  2. Check for server firmware updates; then, install the updates if available.
- 

**B7005209**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7005219**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7005300**

**Explanation:** System firmware detected a failure while partitioning resources. The platform partitioning code encountered an error.

**Response:** Check the Management Module event log for error codes; then, take the actions associated with those error codes.

---

**B7005301**

**Explanation:** User intervention required. The system detected a problem with the partition configuration.

**Response:** Use the management console to reallocate the system resources.

---



---

**B7005302**

**Explanation:** An unsupported Preferred Operating System was detected.

The Preferred Operating System specified is not supported. The IPL will not continue.

**Response:** Work with IBM support to select a supported Preferred Operating System; then, re-IPL the system.

---

**B7005303**

**Explanation:** An unsupported Preferred Operating System was detected.

The Preferred Operating System specified is not supported. The IPL will continue.

**Response:** Work with IBM support to select a supported Preferred Operating System; then, re-IPL the system.

---

**B7005304**

**Explanation:** The number of available World Wide Port Names (WWPN) is low.

**Response:** Refer to <https://www-912.ibm.com/supporthome.nsf/document/51455410>

---

**B7005305**

**Explanation:** There are no remaining World Wide Port Names (WWPN).

**Response:** Refer to <https://www-912.ibm.com/supporthome.nsf/document/51455410>

---

**B7005306**

**Explanation:** There is insufficient licensed memory for firmware to support the manufacturing default configuration.

**Response:** Contact IBM support or marketing representative to obtain an activation code to license more memory in the system.

---

**B7005400**

**Explanation:** System firmware detected a problem with a processor.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7005442**

**Explanation:** System firmware detected an error.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

---

**B70054DD**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7005600**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7005601**

**Explanation:** System firmware failure. There was a problem initializing, reading, or using system location codes.

**Response:** Go to Isolating firmware problems.

---

**B7005602**

**Explanation:** The system has out-of-date VPD LIDs.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B7005603**

**Explanation:** Enclosure feature code and/or serial number not valid.

**Response:** Verify that the machine type, model, and serial number are correct for this server.

---

**B7006900**

**Explanation:** PCI host bridge failure

**Response:**

1. Replace the system-board, as described in Replacing the system-board and chassis assembly.
  2. If the problem persists, use the PCI expansion card (PIOCARD) problem isolation procedure to determine the failing component.
- 

**B7006906**

**Explanation:** System bus error

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006907**

**Explanation:** System bus error

**Response:**

1. Replace the system-board, as described in Replacing the system-board and chassis assembly.
2. Go to Isolating firmware problems.

---

**B7006908**

**Explanation:** System bus error

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006909**

**Explanation:** System bus error

**Response:**

1. Replace the system-board, as described in Replacing the system-board and chassis assembly.
2. Go to Isolating firmware problems.

---

**B7006911**

**Explanation:** Platform LIC unable to find or retrieve VPD LID file.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B7006912**

**Explanation:** Platform LIC unable to find or retrieve VPD LID file.

**Response:** Check for server firmware updates; then, install the updates if available.

---

**B7006944**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006950**

**Explanation:** A platform dump has occurred.

**Response:**

1. Collect the platform dump information.
2. Go to Isolating firmware problems.

---

**B7006951**

**Explanation:** An error occurred because a partition needed more NVRAM than was available.

**Response:** Use the management console to delete one or more partitions.

---

**B7006952**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006953**

**Explanation:** PHYP NVRAM is unavailable after a service processor reset and reload.

**Response:** Go to Isolating firmware problems.

---

**B7006954**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006955**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006956**

**Explanation:** An NVRAM failure was detected.

**Response:** Go to Isolating firmware problems.

---

**B7006965**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006970**

**Explanation:** PCI host bridge failure

**Response:**

1. Replace the system-board, as described in Replacing the system-board and chassis assembly.
2. If the problem persists, use the PCI expansion card (PIOCARD) problem isolation procedure to determine the failing component.

---

**B7006971**

**Explanation:** PCI bus failure

**Response:**

1. Use the PCI expansion card (PIOCARD) problem isolation procedure to determine the failing component.
2. If the problem persists, replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006972**

**Explanation:** System bus error

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006973**

**Explanation:** System bus error

**Response:**

1. Use the PCI expansion card (PIOCARD) problem isolation procedure to determine the failing component.
2. If the problem persists, replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006974**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006978**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006979**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B700697C**

**Explanation:** Connection from service processor to system processor failed.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006980**

**Explanation:** RIO, HSL or 12X controller failure

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006981**

**Explanation:** System bus error.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006984**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B7006985**

**Explanation:** Remote I/O (RIO), high-speed link (HSL), or 12X loop status message.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006987**

**Explanation:** Remote I/O (RIO), high-speed link (HSL), or 12X connection failure.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006990**

**Explanation:** Service processor failure.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006991**

**Explanation:** System firmware failure

**Response:** Go to Isolating firmware problems.

---

**B7006993**

**Explanation:** Service processor failure

**Response:**

1. Replace the system-board, as described in Replacing the system-board and chassis assembly.
2. Go to Isolating firmware problems.

---

**B7006994**

**Explanation:** Service processor failure.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B7006995**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B70069C2**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B70069C3**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B70069D9**

**Explanation:** Host Ethernet Adapter (HEA) failure.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

**B70069DA**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B70069DB**

**Explanation:** System firmware failure.

**Response:**

1. Collect the platform dump information.
2. Go to Isolating firmware problems.

---

**B70069F1**

**Explanation:** I/O Controller had a permanent unrecoverable failure.

**Response:** If there are any Operating System errors logged against I/O adapters, do not replace any I/O adapter hardware. This I/O Controller failure is the root cause.

1. Collect error logs and informational logs.
2. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.
3. Although the partition or application may have continued to run after the I/O adapter failures, it might need to be restarted to recover.

---

**B70069F2**

**Explanation:** I/O Controller had a temporary failure which has been recovered. Do not replace any FRUs.

**Response:** If there are any Operating System errors logged against I/O adapters, do not replace any I/O adapter hardware. This I/O Controller failure is the root cause.

1. Collect error logs and informational logs.
2. Although the partition or application may have continued to run after the failure, it might need to be restarted to recover.

---

**B70069F3**

**Explanation:** I/O Controller failed.

**Response:** If there are any Operating System errors logged against I/O adapters, do not replace any I/O adapter hardware. This I/O Controller failure is the root cause.

1. Collect error logs and informational logs.
2. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.
3. Although the partition or application may have continued to run after the I/O adapter failures, it might need to be restarted to recover.

---

**B70069F4**

**Explanation:** I/O Controller failed. The I/O Controller is not responding or is not reachable.

**Response:** If there are any Operating System errors logged against I/O adapters, do not replace any I/O adapter hardware. This I/O Controller failure is the root cause.

1. Collect error logs and informational logs.
2. Look in the Serviceable Event View for B130E5xx SRCs logged at about the same time. If you find any, then close the B70069F4 SRC, and work to resolve the B130E5xx SRC.
3. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.
4. Although the partition or application may have continued to run after the I/O adapter failures, it might need to be restarted to recover.



---

**B70069F5**

**Explanation:** I/O Controller failed. The I/O Controller detected an invalid firmware action.

**Response:** If there are any Operating System errors logged against I/O adapters, do not replace any I/O adapter hardware. This I/O Controller failure is the root cause.

1. Collect error logs and informational logs.
2. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.
3. Go to Isolating firmware problems.
4. Although the partition or application may have continued to run after the I/O adapter failures, it might need to be restarted to recover.

---

**B7006A21**

**Explanation:** PCI-E switch had a permanent unrecoverable (internal) chip failure. All downstream I/O is failed.

**Response:**

1. Collect error logs and info logs.
2. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly. Send the failed FRU and the data to IBM for fault analysis.

---

**B7006A22**

**Explanation:** PCI-E switch had a recoverable failure, however, all downstream I/O had to be failed during recovery. Recovery for the PCI-E switch failure is being attempted. If the recovery is successful, no other SRC is logged.

**Response:** Once the PCI-E switch is recovered, the downstream I/O adapters should recover. The partition or application associated with the failed downstream I/O may have to be restarted.

---

**B7006A23**

**Explanation:** PCI-E switch recovery failure. All downstream I/O is failed.

**Response:** If there are any AIX or Linux errors logged against I/O adapters on this switch, do not replace any I/O adapter hardware. This PCI-E switch failure is the root cause.

1. Collect error logs and info logs.
2. Collect the configuration data for the IOAs downstream of the PCI-E switch.
3. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.
4. Although the partition or application may have continued to run after the I/O adapter failures, it might need to be restarted to recover.

---

**B7006A24**

**Explanation:** PCI-E switch had an unrecoverable failure. All downstream I/O is failed.

**Response:**

1. Collect error logs and info logs.
2. Collect the configuration data for the IOAs downstream of the PCI-E switch.
3. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly. Send the failed FRU and the data to IBM for fault analysis.

---

**B7006A25**

**Explanation:** PCI-E switch has detected a firmware action that was not valid. All downstream I/O is failed.

**Response:**

1. Collect error logs and info logs.
2. Collect the configuration data for the IOAs downstream of the PCI-E switch.
3. Update the firmware to the current level, as described in Updating the firmware.
4. If the problem persists, replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly. Send the failed FRU and the data to IBM for fault analysis.

---

**B7006A28**

**Explanation:** PCI-E switch had a correctable error. Downstream I/O is not affected.

**Response:** No corrective action is required.

---

**B7006A2A**

**Explanation:** PCI-E switch downstream I/O bus had a recoverable failure. The downstream IOA might be failed.

**Response:** Look for and resolve other errors. If there were no other errors, then the PCI-E switch recovery was successful. In either case, determine if any downstream I/O adapters are in failed states and to which partitions they belong. The partition or application associated with the failed downstream I/O might have to be restarted.

---

**B7006A2B**

**Explanation:** PCI-E switch downstream bus had recoverable failure, but has reached the threshold of recovery attempts. The downstream IOA is failed.

**Response:**

1. Collect error logs and info logs.
2. Collect the configuration data for the IOAs downstream of the PCI-E switch.
3. Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly. Send the failed FRU and the data to IBM for fault analysis.
4. After the FRU has been replaced, the partition or application associated with the failed downstream I/O may have to be restarted.

---

**B7006A30**

**Explanation:** A PCI-E bus internal connection initialized to a lower bus configuration than expected. The bus is operational, but operating at a bandwidth below its rated capacity. This might lead to degraded I/O throughput.

**Response:** If this event appears in a serviceable event view, replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly. If this event does not appear in a serviceable event view, no service action is required.

---

**B700BA01**

**Explanation:** During analysis of a previous serviceable error, a request to activate a FRU fault indicator was not successful.

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

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**B700BAD1**

**Explanation:** The platform firmware detected an error.

**Response:** Go to Isolating firmware problems.

---

**B700BAD2**

**Explanation:** System firmware detected an error.

**Response:**

1. Collect the event log information.
  2. Go to Isolating firmware problems.
- 

**B700F103**

**Explanation:** System firmware failure

**Response:**

1. Collect the event log information.
  2. Collect the platform dump information.
  3. Go to Isolating firmware problems.
- 

**B700F104**

**Explanation:** Operating system error. System firmware terminated a partition.

**Response:** Check the Management Module event log for partition firmware error codes (especially BA00F104); then, take the appropriate actions for those error codes.

---

**B700F105**

**Explanation:** System firmware detected an internal error

**Response:**

1. Collect the event log information.
2. Collect the platform dump information.
3. Go to Isolating firmware problems.

### B700F106

**Explanation:** System firmware detected an error

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

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### B700F107

**Explanation:** System firmware detected an error.

**Response:**

1. Collect the event log information.
  2. Go to Isolating firmware problems.
- 

### B700F108

**Explanation:** A firmware error caused the system to terminate.

**Response:**

1. Collect the event log information.
  2. Go to Isolating firmware problems.
- 

### B700F10A

**Explanation:** System firmware detected an error

**Response:** Look for and correct B1xxxxxx errors.

---

### B700F10B

**Explanation:** A processor resource has been disabled due to hardware problems

**Response:** Replace the system-board and chassis assembly, as described in Replacing the system-board and chassis assembly.

---

### B700F10C

**Explanation:** The platform LIC detected an internal problem performing Partition Mobility.

**Response:**

1. Collect the event log information.
2. Go to Isolating firmware problems.

---

**B700F120**

**Explanation:** Informational system log entry only.

**Response:** No corrective action is required.

---

**B700F130**

**Explanation:** Thermal Power Management Device firmware error was detected.

**Response:** Check for server firmware updates; then, install the updates if available.

**BAxxxxxx partition firmware SRCs:**

The power-on self-test (POST) might display an error code that the partition firmware detects. Try to correct the problem with the suggested action.

The BAxxxxxx SRCs below are the error codes that might be displayed if POST detects a problem. Follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, then you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

**Note:** For problems persisting after completing the suggested actions, see “Checkout procedure” on page 414 and “Solving undetermined problems” on page 457.

---

**BA000010**

**Explanation:** The device data structure is corrupted

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA000020**

**Explanation:** Incompatible firmware levels were found

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000030**

**Explanation:** An lpevent communication failure occurred

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA000031**

**Explanation:** An lpevent communication failure occurred

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA000032**

**Explanation:** The firmware failed to register the lpevent queues

**Response:**

1. Reboot the server.
2. If the problem persists, Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000034**

**Explanation:** The firmware failed to exchange capacity and allocate lpevents

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000038**

**Explanation:** The firmware failed to exchange virtual continuation events

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000040**

**Explanation:** The firmware was unable to obtain the RTAS code lid details

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000050**

**Explanation:** The firmware was unable to load the RTAS code lid

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000060**

**Explanation:** The firmware was unable to obtain the open firmware code lid details

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000070**

**Explanation:** The firmware was unable to load the open firmware code LID.

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000080**

**Explanation:** The user did not accept the license agreement

**Response:** Accept the license agreement and restart the server. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000081**

**Explanation:** Failed to get the firmware license policy

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000082**

**Explanation:** Failed to set the firmware license policy

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA000091**

**Explanation:** Unable to load a firmware code update module

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA00E820**

**Explanation:** An lpevent communication failure occurred

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA00E830**

**Explanation:** Failure when initializing ibm,event-scan

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware



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**BA00E840**

**Explanation:** Failure when initializing PCI hot-plug

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA00E843**

**Explanation:** Failure when initializing the interface to AIX or Linux

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA00E850**

**Explanation:** Failure when initializing dynamic reconfiguration

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA00E860**

**Explanation:** Failure when initializing sensors

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA010000**

**Explanation:** There is insufficient information to boot the server

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA010001**

**Explanation:** The client IP address is already in use by another network device

**Response:** Verify that all of the IP addresses on the network are unique; then, retry the operation.

---

**BA010002**

**Explanation:** Cannot get gateway IP address

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA010003**

**Explanation:** Cannot get server hardware address

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA010004**

**Explanation:** Bootp failed

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA010005**

**Explanation:** File transmission (TFTP) failed

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
  - The bootp server is correctly configured; then, retry the operation.
  - The network connections are correct; then, retry the operation.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA010006**

**Explanation:** The boot image is too large

**Response:** Start up from another device with a bootable image.

---

**BA010007**

**Explanation:** The device does not have the required device\_type property.

**Response:**

1. Reboot the server.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA010008**

**Explanation:** The device\_type property for this device is not supported by the iSCSI initiator configuration specification.

**Response:**

1. Reboot the server.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA010009**

**Explanation:** The arguments specified for the ping function are invalid.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

---

**BA01000A**

**Explanation:** The itname parameter string exceeds the maximum length allowed.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

---

**BA01000B**

**Explanation:** The ichapid parameter string exceeds the maximum length allowed.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

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**BA01000C**

**Explanation:** The ichappw parameter string exceeds the maximum length allowed.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

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**BA01000D**

**Explanation:** The iname parameter string exceeds the maximum length allowed.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

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**BA01000E**

**Explanation:** The LUN specified is not valid.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

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**BA01000F**

**Explanation:** The chapid parameter string exceeds the maximum length allowed.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

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**BA010010**

**Explanation:** The chappw parameter string exceeds the maximum length allowed.

**Response:** The embedded host Ethernet adapters (HEAs) help provide iSCSI, which is supported by iSCSI software device drivers on either AIX or Linux. Verify that all of the iSCSI configuration arguments on the operating system comply with the configuration for the iSCSI Host Bus Adapter (HBA), which is the iSCSI initiator.

---

**BA010011**

**Explanation:** SET-ROOT-PROP could not find the / (root) package

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA010013**

**Explanation:** The information in the error log entry for this SRC provides network trace data.

**Response:** Informational message. No action is required.

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**BA010014**

**Explanation:** The information in the error log entry for this SRC provides network trace data.

**Response:** Informational message. No action is required.

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**BA010015**

**Explanation:** The information in the error log entry for this SRC provides network trace data.

**Response:** Informational message. No action is required.

---

**BA010020**

**Explanation:** A trace entry addition failed because of a bad trace type.

**Response:**

1. Reboot the server.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA012010**

**Explanation:** Opening the TCP node failed.

**Response:**

1. Reboot the server.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA012011**

**Explanation:** TCP failed to read from the network

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA012012**

**Explanation:** TCP failed to write to the network.

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA012013**

**Explanation:** Closing TCP failed.

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA017020**

**Explanation:** Failed to open the TFTP package

**Response:** Verify that the Trivial File Transfer Protocol (TFTP) parameters are correct.

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**BA017021**

**Explanation:** Failed to load the TFTP file

**Response:** Verify that the TFTP server and network connections are correct.

---

**BA01B010**

**Explanation:** Opening the BOOTP node failed.

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA01B011**

**Explanation:** BOOTP failed to read from the network

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
  - The bootp server is correctly configured; then retry the operation.
  - The network connections are correct; then retry the operation.
2. If the problem persists, Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA01B012**

**Explanation:** BOOTP failed to write to the network

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists, Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA01B013**

**Explanation:** The discover mode is invalid

**Response:**

1. Reboot the server.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA01B014**

**Explanation:** Closing the BOOTP node failed

**Response:**

1. Reboot the server.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA01B015**

**Explanation:** The BOOTP discover server timed out

**Response:** Perform the following actions that checkpoint CA00E174 describes:

1. Verify that:
    - The bootp server is correctly configured; then retry the operation.
    - The network connections are correct; then retry the operation.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA01D001**

**Explanation:** Opening the DHCP node failed

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

**BA01D020**

**Explanation:** DHCP failed to read from the network

**Response:**

1. Verify that the network cable is connected, and that the network is active.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA01D030**

**Explanation:** DHCP failed to write to the network

**Response:**

1. Verify that the network cable is connected, and that the network is active.
  2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA01D040**

**Explanation:** The DHCP discover server timed out

**Response:**

1. Verify that the DHCP server has addresses available.
  2. Verify that the DHCP server configuration file is not overly constrained. An over-constrained file might prevent a server from meeting the configuration requested by the client.
  3. Perform the following actions that checkpoint CA00E174 describes:
    - a. Verify that:
      - The bootp server is correctly configured; then retry the operation.
      - The network connections are correct; then retry the operation.
    - b. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA01D050**

**Explanation:** DHCP::discover no good offer

**Response:** DHCP discovery did not receive any DHCP offers from the servers that meet the client requirements.

Verify that the DHCP server configuration file is not overly constrained. An over-constrained file might prevent a server from meeting the configuration requested by the client.

---

**BA01D051**

**Explanation:** DHCP::discover DHCP request timed out

**Response:** DHCP discovery did receive a DHCP offer from a server that met the client requirements, but the server did not send the DHCP acknowledgement (DHCP ack) to the client DHCP request.

Another client might have used the address that was served.

Verify that the DHCP server has addresses available.



---

**BA01D052**

**Explanation:** DHCP::discover: 10 incapable servers were found

**Response:** Ten DHCP servers have sent DHCP offers, none of which met the requirements of the client. Check the compatibility of the configuration that the client is requesting and the server DHCP configuration files.

---

**BA01D053**

**Explanation:** DHCP::discover received a reply, but without a message type

**Response:** Verify that the DHCP server is properly configured.

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**BA01D054**

**Explanation:** DHCP::discover: DHCP nak received

**Response:** DHCP discovery did receive a DHCP offer from a server that meets the client requirements, but the server sent a DHCP not acknowledged (DHCP nak) to the client DHCP request.

Another client might be using the address that was served.

This situation can occur when there are multiple DHCP servers on the same network, and server A does not know the subnet configuration of server B, and vice-versa.

This situation can also occur when the pool of addresses is not truly divided.

Set the DHCP server configuration file to "authoritative".

Verify that the DHCP server is functioning properly.

---

**BA01D055**

**Explanation:** DHCP::discover: DHCP decline

**Response:** DHCP discovery did receive a DHCP offer from one or more servers that meet the client requirements. However, the client performed an ARP test on the address and found that another client was using the address.

The client sent a DHCP decline to the server, but the client did not receive an additional DHCP offer from a server. The client still does not have a valid address.

Verify that the DHCP server is functioning properly.

---

**BA01D056**

**Explanation:** DHCP::discover: unknown DHCP message

**Response:** DHCP discovery received an unknown DHCP message type. Verify that the DHCP server is functioning properly.

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**BA01D0FF**

**Explanation:** Closing the DHCP node failed.

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA030011**

**Explanation:** RTAS attempt to allocate memory failed

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA04000F**

**Explanation:** Self test failed on device; no error or location code information is available

**Response:**

1. Reboot the server.
2. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA040010**

**Explanation:** Self test failed on device; can't locate package.

**Response:**

1. If a location code is listed with the error, replace the device specified by the location code.
2. If a location code was not listed with the error: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA040020**

**Explanation:** The machine type and model are not recognized by the server firmware.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA040030**

**Explanation:** The firmware was not able to build the UID properly for this system. As a result, problems may occur with the licensing of the AIX operating system.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA040035**

**Explanation:** The firmware was unable to find the plant of manufacture in the VPD. This may cause problems with the licensing of the AIX operating system.

**Response:** Verify that the machine type, model, and serial number are correct for this server. If this is a new server, check for server firmware updates; install the updates if available.

---

**BA040040**

**Explanation:** Setting the machine type, model, and serial number failed.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA040050**

**Explanation:** The h-call to switch off the boot watchdog timer failed.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA040060**

**Explanation:** Setting the firmware boot side for the next boot failed.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

**BA050001**

**Explanation:** Failed to reboot a partition in logical partition mode

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA050004**

**Explanation:** Failed to locate service processor device tree node.

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA05000A**

**Explanation:** Failed to send a boot failed message

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA060008**

**Explanation:** No configurable adapters found by the Remote IPL menu in the SMS utilities

**Response:** This error occurs when the firmware cannot locate any LAN adapters that are supported by the remote IPL function. Verify that the devices in the remote IPL device list are correct using the SMS menus.

---

**BA06000B**

**Explanation:** The system was not able to find an operating system on the devices in the boot list.

**Response:** Go to Boot problem resolution.

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**BA06000C**

**Explanation:** A pointer to the operating system was found in non-volatile storage.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060020**

**Explanation:** The environment variable boot-device exceeded the allowed character limit.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060021**

**Explanation:** The environment variable boot-device contained more than five entries.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA060022**

**Explanation:** The environment variable boot-device contained an entry that exceeded 255 characters in length

**Response:**

1. Using the SMS menus, set the boot list to the default boot list.
2. Shut down, then restart the server.
3. Use the SMS menus to customize the boot list as required.
4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060030**

**Explanation:** Logical partitioning with shared processors is enabled and the operating system does not support it.

**Response:**

1. Install or boot a level of the operating system that supports shared processors.
2. Disable logical partitioning with shared processors in the operating system.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA060060**

**Explanation:** The operating system expects an IOSB partition, but it failed to make the transition to alpha mode.

**Response:**

1. Verify that:
  - The alpha-mode operating system image is intended for this partition.
  - The configuration of the partition supports an alpha-mode operating system.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA060061**

**Explanation:** The operating system expects a non-IOSP partition, but it failed to make the transition to MGC mode.

**Response:**

1. Verify that:
  - The alpha-mode operating system image is intended for this partition.
  - The configuration of the partition supports an alpha-mode operating system.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060070**

**Explanation:** The operating system does not support this system's processor(s)

**Response:** Boot a supported version of the operating system.

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**BA060071**

**Explanation:** An invalid number of vectors was received from the operating system

**Response:** Boot a supported version of the operating system.

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**BA060072**

**Explanation:** Client-arch-support hcall error

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060075**

**Explanation:** Client-arch-support firmware error

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060200**

**Explanation:** Failed to set the operating system boot list from the management module boot list

**Response:**

1. Using the SMS menus, set the boot list to the default boot list.
2. Shut down, then restart the server.
3. Use SMS menus to customize the boot list as required.
4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA060201**

**Explanation:** Failed to read the VPD "boot path" field value

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA060202**

**Explanation:** Failed to update the VPD with the new "boot path" field value

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA060300**

**Explanation:** An I/O error on the adapter from which the boot was attempted prevented the operating system from being booted.

**Response:**

1. Using the SMS menus, select another adapter from which to boot the operating system, and reboot the system.
  2. Attempt to reboot the system.
  3. Go to Boot problem resolution.
- 

**BA07XXXX**

**Explanation:** self configuring SCSI device (SCSD) controller failure

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA090001**

**Explanation:** SCSD DASD: test unit ready failed; hardware error

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA090002**

**Explanation:** SCSD DASD: test unit ready failed; sense data available

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA090003**

**Explanation:** SCSD DASD: send diagnostic failed; sense data available

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA090004**

**Explanation:** SCSD DASD: send diagnostic failed: devofl cmd

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA09000A**

**Explanation:** There was a vendor specification error.

**Response:**

1. Check the vendor specification for additional information.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA09000B**

**Explanation:** Generic SCSD sense error

**Response:**

1. Verify that the SCSD cables and devices are properly plugged.
2. Correct any problems that are found.
3. Reboot the server.
4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware



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**BA09000C**

**Explanation:** The media is write-protected

**Response:**

1. Change the setting of the media to allow writing, then retry the operation.
  2. Insert new media of the correct type.
  3. Reboot the server.
  4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA09000D**

**Explanation:** The media is unsupported or not recognized.

**Response:**

1. Insert new media of the correct type.
- 

**BA09000E**

**Explanation:** The media is not formatted correctly.

**Response:**

1. Insert the media.
  2. Insert new media of the correct type.
  3. Reboot the server.
  4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA09000F**

**Explanation:** Media is not present

**Response:**

1. Insert new media with the correct format.
  2. Reboot the server.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA090010**

**Explanation:** The request sense command failed.

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. Reboot the server.
5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA090011**

**Explanation:** The retry limit has been exceeded.

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. Reboot the server.
5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA090012**

**Explanation:** There is a SCSD device in the system that is not supported.

**Response:**

1. Replace the SCSD device that is not supported with a supported device.
2. If the problem persists:
  - a. Troubleshoot the SCSD devices.
  - b. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
  - c. Replace the SCSD cables and devices.
  - d. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

---

**BA120001**

**Explanation:** On an undetermined SCSD device, test unit ready failed; hardware error

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA120002**

**Explanation:** On an undetermined SCSD device, test unit ready failed; sense data available

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA120003**

**Explanation:** On an undetermined SCSD device, send diagnostic failed; sense data available

**Response:**

1. Troubleshoot the SCSD devices.
  2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
  3. Replace the SCSD cables and devices.
  4. Reboot the server.
  5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA120004**

**Explanation:** On an undetermined SCSD device, send diagnostic failed; devofl command

**Response:**

1. Troubleshoot the SCSD devices.
  2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
  3. Replace the SCSD cables and devices.
  4. Reboot the server.
  5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA120010**

**Explanation:** Failed to generate the SAS device physical location code. The event log entry has the details.

**Response:**

1. Reboot the server.
  2. Reboot the server.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA130010**

**Explanation:** USB CD-ROM in the media tray: device remained busy longer than the time-out period

**Response:**

1. Retry the operation.
2. Reboot the server.
3. Troubleshoot the media tray and CD-ROM drive.
4. Replace the USB CD or DVD drive.
5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

**BA130011**

**Explanation:** USB CD-ROM in the media tray: execution of ATA/ATAPI command was not completed with the allowed time.

**Response:**

1. Retry the operation.
  2. Reboot the server.
  3. Troubleshoot the media tray and CD-ROM drive.
  4. Replace the USB CD or DVD drive.
  5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA130012**

**Explanation:** USB CD-ROM in the media tray: execution of ATA/ATAPI command failed.

**Response:**

1. Retry the operation.
  2. Reboot the server.
  3. Troubleshoot the media tray and CD-ROM drive.
  4. Replace the USB CD or DVD drive.
  5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA130013**

**Explanation:** USB CD-ROM in the media tray: bootable media is missing from the drive

**Response:**

1. Insert a bootable CD in the drive and retry the operation.
  2. Retry the operation.
  3. Reboot the server.
  4. Troubleshoot the media tray and CD-ROM drive.
  5. Replace the USB CD or DVD drive.
  6. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
- 

**BA130014**

**Explanation:** USB CD-ROM in the media tray: the media in the USB CD-ROM drive has been changed.

**Response:**

1. Retry the operation.
2. Reboot the server.
3. Troubleshoot the media tray and CD-ROM drive.
4. Replace the USB CD or DVD drive.
5. Reboot the server.
6. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA130015**

**Explanation:** USB CD-ROM in the media tray: ATA/ATAPI packet command execution failed.

**Response:**

1. Remove the CD or DVD in the drive and replace it with a known-good disk.
2. Retry the operation.
3. Reboot the server.
4. Troubleshoot the media tray and CD-ROM drive.
5. Replace the USB CD or DVD drive.
6. Reboot the server.
7. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA131010**

**Explanation:** The USB keyboard has been removed.

**Response:**

1. Reseat the keyboard cable in the management module USB port.
2. Check for server firmware updates; then, install the updates if available.

---

**BA140001**

**Explanation:** The SCSD read/write optical test unit ready failed; hardware error.

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA140002**

**Explanation:** The SCSD read/write optical test unit ready failed; sense data available.

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA140003**

**Explanation:** The SCSD read/write optical send diagnostic failed; sense data available.

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA140004**

**Explanation:** The SCSD read/write optical send diagnostic failed; devofl command.

**Response:**

1. Troubleshoot the SCSD devices.
2. Verify that the SCSD cables and devices are properly plugged. Correct any problems that are found.
3. Replace the SCSD cables and devices.
4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA150001**

**Explanation:** PCI Ethernet BNC/RJ-45 or PCI Ethernet AUI/RJ-45 adapter: internal wrap test failure

**Response:** Replace the adapter specified by the location code.

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**BA151001**

**Explanation:** 10/100 Mbps Ethernet PCI adapter: internal wrap test failure

**Response:** Replace the adapter specified by the location code.

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**BA151002**

**Explanation:** 10/100 Mbps Ethernet card failure

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Replace the adapter specified by the location code.
4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA153002**

**Explanation:** Gigabit Ethernet adapter failure

**Response:** Verify that the MAC address programmed in the FLASH/EEPROM is correct.

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**BA153003**

**Explanation:** Gigabit Ethernet adapter failure

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. Replace the adapter specified by the location code.
  4. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA154010**

**Explanation:** HEA h-call error.

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA154020**

**Explanation:** The required open firmware property was not found.

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA154030**

**Explanation:** Invalid parameters were passed to the HEA device driver.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA154040**

**Explanation:** The TFTP package open failed

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA154050**

**Explanation:** The transmit operation failed.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA154060**

**Explanation:** Failed to initialize the HEA port or queue

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA154070**

**Explanation:** The receive operation failed.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA15C001**

**Explanation:** The command to retrieve the MAC address from the adapter failed.

**Response:**

1. Check for and apply any adapter microcode or firmware driver updates.
2. Replace adapter specified by the location code that was reported with the SRC.



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**BA170000**

**Explanation:** NVRAMRC initialization failed; device test failed

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170100**

**Explanation:** NVRAM data validation check failed

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170201**

**Explanation:** The firmware was unable to expand the target partition - saving configuration variable

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170202**

**Explanation:** The firmware was unable to expand the target partition - writing event log entry

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170203**

**Explanation:** The firmware was unable to expand the target partition - writing VPD data

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170210**

**Explanation:** Setenv/\$Setenv parameter error - name contains a null character

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170211**

**Explanation:** Setenv/\$Setenv parameter error - value contains a null character

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170220**

**Explanation:** Unable to write a variable value to NVRAM due to lack of free memory in NVRAM.

**Response:**

1. Reduce the number of partitions, if possible, to add more NVRAM memory to this partition.
2. Reboot the server.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA170221**

**Explanation:** Setenv/\$setenv had to delete stored firmware network boot settings to free memory in NVRAM.

**Response:** Enter the adapter and network parameters again for the network boot or network installation.

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**BA170998**

**Explanation:** NVRAMRC script evaluation error - command line execution error.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180008**

**Explanation:** PCI device Fcode evaluation error

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180009**

**Explanation:** The Fcode on a PCI adapter left a data stack imbalance

**Response:**

1. Check for adapter firmware updates; install the updates if available.
2. Check for server firmware updates; install the updates if available.
3. Replace the PCI adapter card.
4. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180010**

**Explanation:** PCI probe error; the bridge is in a freeze state

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180011**

**Explanation:** PCI bridge probe error; the bridge is not usable

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180012**

**Explanation:** PCI device runtime error; the bridge is in a freeze state

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180014**

**Explanation:** MSI software error

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180020**

**Explanation:** No response was received from a slot during PCI probing.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180099**

**Explanation:** PCI probe error; the bridge is in a freeze state, and the slot is in a reset state

**Response:**

1. Reseat the PCI adapter card.
2. Check for adapter firmware updates; install the updates if available.
3. Check for server firmware updates; install the updates if available.
4. Replace the PCI adapter card.
5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA180100**

**Explanation:** The FDDI adapter Fcode driver is not supported on this server.

**Response:** IBM may produce a compatible driver in the future, but does not guarantee one.

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**BA180101**

**Explanation:** Stack underflow from fibre-channel adapter

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA190001**

**Explanation:** Firmware function to get/set time-of-day reported an error

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA201001**

**Explanation:** The serial interface dropped data packets

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA201002**

**Explanation:** The serial interface failed to open

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA201003**

**Explanation:** The firmware failed to handshake properly with the serial interface

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210000**

**Explanation:** Partition firmware reports a default catch

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

**BA210001**

**Explanation:** Partition firmware reports a stack underflow was caught

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA210002**

**Explanation:** Partition firmware was ready before standout was ready

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA210003**

**Explanation:** A data storage error was caught by partition firmware

**Response:**

1. If the location code reported with the error points to an adapter, check for adapter firmware updates.
  2. Apply any available updates.
  3. Check for server firmware updates.
  4. Apply any available updates.
  5. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA210004**

**Explanation:** An open firmware stack-depth assert failed.

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA210010**

**Explanation:** The transfer of control to the SLIC loader failed

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210011**

**Explanation:** The transfer of control to the IO reporter failed

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210012**

**Explanation:** There was an NVRAMRC forced-boot problem; unable to load the previous boot's operating system image

**Response:**

1. Use the SMS menus to verify that the partition firmware can still detect the operating system image.
2. Reboot the server.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210013**

**Explanation:** There was a partition firmware error when in the SMS menus.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210020**

**Explanation:** I/O configuration exceeded the maximum size allowed by partition firmware.

**Response:**

1. Increase the logical memory block size to 256 MB and restart the server.
2. Reboot the server.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210100**

**Explanation:** An error may not have been sent to the management module event log.

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210101**

**Explanation:** The partition firmware event log queue is full

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210102**

**Explanation:** There was a communication failure between partition firmware and the hypervisor. The lpevent that was expected from the hypervisor was not received.

**Response:**

1. Review the event log for errors that occurred around the time of this error.
2. Correct any errors that are found and reboot the server.
3. If the problem persists, Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA210103**

**Explanation:** There was a communication failure between partition firmware and the hypervisor. There was a failing return code with the lpevent acknowledgement from the hypervisor.

**Response:**

1. Review the event log for errors that occurred around the time of this error.
2. Correct any errors that are found and reboot the server.
3. If the problem persists, Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA220010**

**Explanation:** There was a partition firmware error during USB hotplug probing. USB hotplug may not work properly on this partition.

**Response:**

1. Review the event log for EEH-type errors that occurred around the time of this error.
2. Correct any EEH errors that are found and reboot the server.
3. If the problem persists: Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware



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**BA220020**

**Explanation:** CRQ registration error; partner vslot may not be valid

**Response:** Verify that this client virtual slot device has a valid server virtual slot device in a hosting partition.

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**BA278001**

**Explanation:** Failed to flash firmware: invalid image file

**Response:** Download a new firmware update image and retry the update.

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**BA278002**

**Explanation:** Flash file is not designed for this platform

**Response:** Download a new firmware update image and retry the update.

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**BA278003**

**Explanation:** Unable to lock the firmware update lid manager

**Response:**

1. Restart the server.
  2. Verify that the operating system is authorized to update the firmware. If the system is running multiple partitions, verify that this partition has service authority.
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**BA278004**

**Explanation:** An invalid firmware update lid was requested

**Response:** Download a new firmware update image and retry the update.

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**BA278005**

**Explanation:** Failed to flash a firmware update lid

**Response:** Download a new firmware update image and retry the update.

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**BA278006**

**Explanation:** Unable to unlock the firmware update lid manager

**Response:**

1. Reboot the server.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

**BA278007**

**Explanation:** Failed to reboot the system after a firmware flash update

**Response:**

1. Reboot the server.
  2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA278009**

**Explanation:** The operating system's server firmware update management tools are incompatible with this system.

**Response:** Go to the IBM download site at [www14.software.ibm.com/webapp/set2/sas/f/lopdiags/home.html](http://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/home.html) to download the latest version of the service aids package for Linux.

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**BA27800A**

**Explanation:** The firmware installation failed due to a hardware error that was reported.

**Response:**

1. Look for hardware errors in the event log.
  2. Resolve any hardware errors that are found.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA280000**

**Explanation:** RTAS discovered an invalid operation that may cause a hardware error

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA290000**

**Explanation:** RTAS discovered an internal stack overflow

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA290001**

**Explanation:** RTAS low memory corruption was detected

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA290002**

**Explanation:** RTAS low memory corruption was detected

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA310010**

**Explanation:** Unable to obtain the SRC history

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA310020**

**Explanation:** An invalid SRC history was obtained.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA310030**

**Explanation:** Writing the MAC address to the VPD failed.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA330000**

**Explanation:** Memory allocation error.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA330001**

**Explanation:** Memory allocation error.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA330002**

**Explanation:** Memory allocation error.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA330003**

**Explanation:** Memory allocation error.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA330004**

**Explanation:** Memory allocation error.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340001**

**Explanation:** There was a logical partition event communication failure reading the BladeCenter open fabric manager parameter data structure from the service processor.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340002**

**Explanation:** There was a logical partition event communication failure reading the BladeCenter open fabric manager location code mapping data from the service processor.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340003**

**Explanation:** An internal firmware error occurred; unable to allocate memory for the open fabric manager location code mapping data.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340004**

**Explanation:** An internal firmware error occurred; the open fabric manager parameter data was corrupted.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

**BA340005**

**Explanation:** An internal firmware error occurred; the location code mapping table was corrupted.

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA340006**

**Explanation:** An LP (logical partition) event communication failure occurred reading the system initiator capability data from the service processor.

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA340007**

**Explanation:** An internal firmware error occurred; the open fabric manager system initiator capability data was corrupted.

**Response:**

1. Reboot the server.
  2. Check for server firmware updates; install the updates if available.
  3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware
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**BA340008**

**Explanation:** An internal firmware error occurred; the open fabric manager system initiator capability data version was not correct.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340009**

**Explanation:** An internal firmware error occurred; the open fabric manager system initiator capability processing encountered an unexpected error.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340010**

**Explanation:** An internal firmware error was detected during open fabric manager processing.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340011**

**Explanation:** Assignment of the fabric ID to the I/O adapter failed.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340020**

**Explanation:** A logical partition event communication failure occurred when writing the BladeCenter open fabric manager parameter data to the service processor.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA340021**

**Explanation:** A logical partition event communication failure occurred when writing the BladeCenter open fabric manager system initiator capabilities data to the service processor.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA400001**

**Explanation:** Informational message: DMA trace buffer full.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

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**BA400002**

**Explanation:** Informational message: DMA map-out size mismatch.

**Response:**

1. Reboot the server.
2. Check for server firmware updates; install the updates if available.
3. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware

## **POST progress codes (checkpoints)**

When you turn on the compute node, the power-on self-test (POST) performs a series of tests to check the operation of the compute node components. Use the management module to view progress codes that offer information about the stages involved in powering on and performing an initial program load (IPL).

Progress codes do not indicate an error, although in some cases, the compute node can pause indefinitely (hang). Progress codes for compute nodes are 9-word, 8-digit hexadecimal numbers that start with C and D.

Checkpoints are generated by various components. The service processor and the partitioning firmware are key contributors. The service processor provides additional isolation procedure codes for troubleshooting.

A checkpoint might have an associated location code as part of the message. The location code provides information that identifies the failing component when there is a hang condition.

**Notes:**

1. For checkpoints with no associated location code, see “Light path diagnostics” on page 446 to identify the failing component when there is a hang condition.
2. For checkpoints with location codes, see “Location codes” on page 87 to identify the failing component when there is a hang condition.
3. For eight-digit codes not listed here, see Progress codes overview in the Systems Hardware information center.



Use ASMI to display the error and event logs. See Displaying error and event logs in the IBM Power Systems Hardware Information Center.

### **C1xyyyy service processor checkpoints:**

The C1xyyyy progress codes, or checkpoints, offer information about the initialization of both the service processor and the compute node. Service processor checkpoints are typical reference codes that occur during the initial program load (IPL) of the compute node.

The C1xyyyy progress codes below are the progress codes that might be displayed during the power-on self-test (POST), along with suggested actions to take if the system hangs on the progress code. Only when you experience a hang condition should you take any of the actions described for a progress code.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

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#### **C10010XX**

**Explanation:** Pre-standby

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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#### **C1001F00**

**Explanation:** Pre-standby: starting initial transition file

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

#### **C1001F0D**

**Explanation:** Pre-standby: discovery completed in initial transition file

While the blade server displays this checkpoint, the service processor is reading the server vital product data (VPD). The service processor must complete reading the server VPD before the server displays the next progress code.

**Response:**

1. Wait at least 15 minutes for this checkpoint to change before deciding that the server is hung.  
Reading the server VPD might take as long as 15 minutes on servers with maximum configurations or many disk drives.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
3. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1001F0F**

**Explanation:** Pre-standby: waiting for standby synchronization from initial transition file

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1001FFF**

**Explanation:** Pre-standby: completed initial transition file

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009034**

**Explanation:** Processor mask attentions being initialized

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X01**

**Explanation:** Hardware object manager (HOM): the can-continue flag is being cleared

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X02**

**Explanation:** Hardware object manager (HOM): erase HOM IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X04**

**Explanation:** Hardware object manager (HOM): build cards IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X08**

**Explanation:** Hardware object manager (HOM): build processors IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X0C**

**Explanation:** Hardware object manager (HOM): build chips IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X10**

**Explanation:** Hardware object manager (HOM): initialize HOM

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X14**

**Explanation:** Hardware object manager (HOM): validate HOM

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C1009X18

**Explanation:** Hardware object manager (HOM): GARD in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X1C

**Explanation:** Hardware object manager: (HOM): clock test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X20

**Explanation:** Frequency control IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X24

**Explanation:** Asset protection IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X28

**Explanation:** Memory configuration IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X2C**

**Explanation:** Processor initialization in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X30**

**Explanation:** Processor self-synchronization in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X38**

**Explanation:** Processor check ring IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X39**

**Explanation:** Processor L2 line delete in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X3A**

**Explanation:** Load processor IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**C1009X3C**

**Explanation:** Processor self-test step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X40**

**Explanation:** Processor self-test step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X44**

**Explanation:** Processor array initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X46**

**Explanation:** Processor initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X48**

**Explanation:** Processor flush IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X4C**

**Explanation:** Processor wire test IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X50**

**Explanation:** Processor long scan IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X54**

**Explanation:** Start processor clocks IPL step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X58**

**Explanation:** Processor SCOM initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X5C**

**Explanation:** Processor interface alignment procedure in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**C1009X5E**

**Explanation:** Processor cache test case in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X60**

**Explanation:** Processor random data test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X64**

**Explanation:** Processor enable machine check test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X66**

**Explanation:** Concurrent initialization in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C1009X68**

**Explanation:** Processor fabric initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



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**C1009X6C**

**Explanation:** Processor link initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X70**

**Explanation:** ASIC initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009X74**

**Explanation:** ASIC mask attentions being set up

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X78**

**Explanation:** ASIC check rings being set up

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X7C**

**Explanation:** ASIC self-test being run

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C1009X80

**Explanation:** ASIC test being run

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X82

**Explanation:** ASIC RGC being reset

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X84

**Explanation:** ASIC being flushed

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X88

**Explanation:** ASIC long scan initialization in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009X8C

**Explanation:** ASIC start clocks in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X90**

**Explanation:** Wire test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X92**

**Explanation:** ASIC restore erepair in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X94**

**Explanation:** ASIC transmit/receive initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X98**

**Explanation:** ASIC wrap test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009X9C**

**Explanation:** ASIC SCOM initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C1009X9E

**Explanation:** ASIC HSS set up in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XA0

**Explanation:** ASIC self-test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XA4

**Explanation:** ASIC interface alignment step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XA8

**Explanation:** ASIC random data test in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XAC

**Explanation:** ASIC enable machine check step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009XB0**

**Explanation:** ASIC I/O initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009XB4**

**Explanation:** ASIC DRAM initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009XB8**

**Explanation:** ASIC memory diagnostic step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009XB9**

**Explanation:** PSI diagnostic step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1009XBB**

**Explanation:** Restore L3 line delete step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C1009XBD

**Explanation:** AVP memory test case in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XC0

**Explanation:** Node interface alignment procedure in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XC4

**Explanation:** Dump initialization step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XC8

**Explanation:** Start processor runtime diagnostics (PRD) step in progress

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1009XCC

**Explanation:** Message passing waiting period has begun

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009XD0**

**Explanation:** Message passing waiting period has begun

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C1009XD4**

**Explanation:** Starting elastic interface calibration

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C103A1XX**

**Explanation:** Hypervisor code modules are being transferred to server storage

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C103A2XX**

**Explanation:** Hypervisor data areas are being built in server storage

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C103A3XX**

**Explanation:** Hypervisor data structures are being transferred to server storage

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C103A400

**Explanation:** Special purpose registers are being loaded, and instructions are being started, on the server processors

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C103A401

**Explanation:** Instructions have been started on the server processors

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C1112000

**Explanation:** Power on: starting Standby-PowerOnTransition transition file (primary)

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C11120FF

**Explanation:** Power on: completed Standby-PowerOnTransition transition file (primary)

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C116C2XX

**Explanation:** System power interface is listening for power fault events from the system power control network (SPCN). The last byte (xx) will increment up from 00 to 1F every second while it waits.

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



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**C162E4XX**

**Explanation:** VPD is being collected; xx indicates the type of device from which VPD is being collected

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

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**C1645300**

**Explanation:** Starting a data synchronization operation

**Response:**

1. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**C2xyyyyy virtual service processor checkpoints:**

The C2xyyyyy progress codes indicate the progress of a partition IPL that is controlled by the virtual service processor. The virtual service processor progress codes end after the environment setup completes and the specific operating system code continues the IPL.

The virtual service processor can start a variety of operating systems. Some codes are specific to an operating system and therefore, do not apply to all operating systems.

The C2xyyyyy progress codes below are the progress codes that might be displayed during the power-on self-test (POST), along with suggested actions to take if the system hangs on the progress code. Only when you experience a hang condition should you take any of the actions described for a progress code.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

---

**C2001000**

**Explanation:** Partition auto-startup during a platform startup

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C2001010

**Explanation:** Startup source

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2001100

**Explanation:** Adding partition resources to the secondary configuration

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20011FF

**Explanation:** Partition resources added successfully

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2001200

**Explanation:** Checking if startup is allowed

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20012FF

**Explanation:** Partition startup is allowed to proceed

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2001300

**Explanation:** Initializing ISL roadmap

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C20013FF**

**Explanation:** ISL roadmap initialized successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2001400**

**Explanation:** Initializing SP Communication Area #1

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2001410**

**Explanation:** Initializing startup parameters

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C20014FF**

**Explanation:** Startup parameters initialized successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2002100**

**Explanation:** Power on racks

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2002110**

**Explanation:** Issuing a power on command

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C200211F

**Explanation:** Power on command successful

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20021FF

**Explanation:** Power on phase complete

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2002200

**Explanation:** Begin acquiring slot locks

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20022FF

**Explanation:** End acquiring slot locks

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2002300

**Explanation:** Begin acquiring VIO slot locks

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20023FF

**Explanation:** End acquiring VIO slot locks

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2002400**

**Explanation:** Begin powering on slots

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2002450**

**Explanation:** Waiting for power on of slots to complete

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C20024FF**

**Explanation:** End powering on slots

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2002500**

**Explanation:** Begin power on VIO slots

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C20025FF**

**Explanation:** End powering on VIO slots

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2003100**

**Explanation:** Validating ISL command parameters

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**C2003111**

**Explanation:** Waiting for bus object to become operational

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2003112**

**Explanation:** Waiting for bus unit to become disabled

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2003115**

**Explanation:** Waiting for creation of bus object

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2003150**

**Explanation:** Sending ISL command to bus unit

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C20031FF**

**Explanation:** Waiting for ISL command completion

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C20032FF**

**Explanation:** ISL command complete successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2003300**

**Explanation:** Start SoftPOR of a failed ISL slot

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2003350**

**Explanation:** Waiting for SoftPOR of a failed ISL slot

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C20033FF**

**Explanation:** Finish SoftPOR of a failed ISL slot

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2004100**

**Explanation:** Waiting for load source device to enlist

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2004200**

**Explanation:** Load source device has enlisted

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2004300**

**Explanation:** Preparing connection to load source device

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C20043FF

**Explanation:** Load source device is connected

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2006000

**Explanation:** Locating first LID information on the load source

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2006005

**Explanation:** Clearing all partition main store

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2006010

**Explanation:** Locating next LID information on the load source

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2006020

**Explanation:** Verifying LID information

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2006030

**Explanation:** Priming LP configuration LID

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



---

**C2006040**

**Explanation:** Preparing to initiate LID load from load source

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2006050**

**Explanation:** LP configuration LID primed successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2006060**

**Explanation:** Waiting for LID load to complete

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2006100**

**Explanation:** LID load completed successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2006200**

**Explanation:** Loading raw kernel memory image

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C20062FF**

**Explanation:** Loading raw kernel memory image completed successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### C2008040

**Explanation:** Begin transfer slot locks to partition

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2008060

**Explanation:** End transfer slot locks to partition

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2008080

**Explanation:** Begin transfer VIO slot locks to partition

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20080A0

**Explanation:** End transfer VIO slot locks to partition

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C20080FF

**Explanation:** Hypervisor low-level session manager object is ready

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### C2008100

**Explanation:** Initializing service processor communication area #2

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**C2008104**

**Explanation:** Loading data structures into main store

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2008110**

**Explanation:** Initializing event paths

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2008120**

**Explanation:** Starting processor(s)

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2008130**

**Explanation:** Begin associate of system ports

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2008138**

**Explanation:** Associating system ports to the partition

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C200813F**

**Explanation:** End associate of system ports

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**C20081FF**

**Explanation:** Processors started successfully, now waiting to receive the continue acknowledgement from system firmware

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C2008200**

**Explanation:** Continue acknowledgement received from system firmware

**Response:**

1. Go to Recovering the system firmware.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**C20082FF**

**Explanation:** VSP startup complete successfully

**Response:**

1. Go to Recovering the system firmware.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**IPL status progress codes:**

A compute node that stalls during an initial program load (IPL) of the operating system indicates a problem with the operating system code or hardware configuration.

The Systems Hardware Information center at <http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/index.jsp> describes IPL status progress codes C3yx, C500, C5yx, C600, and C6xx.

**C7xyyyy compute node firmware IPL status checkpoints:**

A compute node that stalls during an initial program load (IPL) of the compute node firmware indicates a problem with the compute node firmware code. If the C7xyyyy progress code that you see is not C7004091, your only service action is to collect information on words 3 and 4 of the SRC, and to call your next level of support.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, "Parts listing for IBM Flex System p24L Compute Node," on page 79 to determine which components are CRUs and which components are FRUs.

---

**C700XXXX**

**Explanation:** A problem has occurred with the system firmware during startup.

**Response:**

1. Shutdown and restart the server from the permanent-side image. See Starting the PERM image.
2. Search RETAIN tips and the firmware change history for the reference code to determine the recommended actions. If a firmware update is needed, see Updating the firmware.
3. If the server firmware was not updated in the previous step, update the server firmware. See Updating the firmware.
4. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CAxxyyyy partition firmware checkpoints:**

The CAxxyyyy partition firmware progress codes provide information about the progress of partition firmware as it is initializing. In some cases, a server might hang (or stall) at one of these progress codes without displaying an 8-character system reference code (SRC).

The CAxxyyyy progress codes below are the progress codes that might be displayed during the power-on self-test (POST), along with suggested actions to take if the system hangs on the progress code. Only when you experience a hang condition should you take any of the actions described for a progress code.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

---

**CA000000**

**Explanation:** Process control now owned by partition firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA000020**

**Explanation:** Checking firmware levels

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA000030**

**Explanation:** Attempting to establish a communication link by using lpevents

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA000032**

**Explanation:** Attempting to register lpevent queues

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA000034**

**Explanation:** Attempting to exchange cap and allocate lpevents

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA000038**

**Explanation:** Attempting to exchange virtual continue events

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA000040**

**Explanation:** Attempting to obtain RTAS firmware details

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA000050**

**Explanation:** Attempting to load RTAS firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA000060**

**Explanation:** Attempting to obtain open firmware details

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA000070**

**Explanation:** Attempting to load open firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA000080**

**Explanation:** Preparing to start open firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA000090**

**Explanation:** Open firmware package corrupted (phase 1)

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA000091**

**Explanation:** Attempting to load the second pass of C code

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA0000A0**

**Explanation:** Open firmware package corrupted (phase 2)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00D001**

**Explanation:** PCI probe process completed, create PCI bridge interrupt routing properties

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00D002**

**Explanation:** PCI adapter NVRAM hint created; system is rebooting

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00D003**

**Explanation:** PCI probing complete

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00D004**

**Explanation:** Beginning of install-console, loading GUI package

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00D008**

**Explanation:** Initialize console and flush queues

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



---

**CA00D00C**

**Explanation:** The partition firmware is about to search for an NVRAM script

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00D00D**

**Explanation:** Evaluating NVRAM script

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00D010**

**Explanation:** First pass open firmware initialization complete; establish parameters for restart

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00D011**

**Explanation:** First pass open firmware initialization complete; control returned to initialization firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00D012**

**Explanation:** Second pass open firmware initialization complete; control returned to initialization firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00D013**

**Explanation:** Runtime open firmware initialization complete; control returned to initialization firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### CA00D020

**Explanation:** About to download the run the SLIC loader (IOP-less boot)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00D021

**Explanation:** About to download the run the IO Reporter (for VPD collection)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E101

**Explanation:** Create RTAS node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E102

**Explanation:** Load and initialize RTAS

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E105

**Explanation:** Transfer control to operating system (normal mode boot)

**Response:** Go to Boot problem resolution.

---

### CA00E10A

**Explanation:** Load RTAS device tree

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E10B**

**Explanation:** Set RTAS device properties

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E110**

**Explanation:** Create KDUMP properties

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E130**

**Explanation:** Build device tree

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E131**

**Explanation:** Create root node properties

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E134**

**Explanation:** Create memory node

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E135**

**Explanation:** Create HCA node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E136**

**Explanation:** Create BSR node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E137**

**Explanation:** Create HEA node

**Response:**

1. Reboot the server.
  2. If the problem persists:
    - a. Go to Checkout procedure.
    - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E138**

**Explanation:** Create options node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E139**

**Explanation:** Create aliases node and system aliases

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E13A**

**Explanation:** Create packages node

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E13B**

**Explanation:** Create HEA node

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E13C**

**Explanation:** Create HEA port node

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E140**

**Explanation:** Loading operating system

**Response:** Go to Boot problem resolution.

---

**CA00E141**

**Explanation:** Synchronizing the operating system bootlist to the management module bootlist

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E142**

**Explanation:** The management module bootlist is being set from the operating system bootlist

**Response:**

1. Reboot the server.
  2. If the problem persists:
    - a. Go to Checkout procedure.
    - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E143**

**Explanation:** The operating system bootlist is being set from the management module bootlist

**Response:**

1. Reboot the server.
  2. If the problem persists:
    - a. Go to Checkout procedure.
    - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E149**

**Explanation:** Create boot manager node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E14C**

**Explanation:** Create terminal emulator node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E14D**

**Explanation:** Load boot image

**Response:** Go to Boot problem resolution.

---

**CA00E150**

**Explanation:** Create host (primary) node

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E151**

**Explanation:** Probing PCI bus

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E152**

**Explanation:** Probing for adapter FCODE; evaluate if present

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E153**

**Explanation:** End adapter FCODE probing and evaluation

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E154**

**Explanation:** Create PCI bridge node

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E155**

**Explanation:** Probing PCI bridge secondary bus

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E156**

**Explanation:** Create plug-in PCI bridge node

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E15B**

**Explanation:** Transfer control to operating system (service mode boot)

**Response:** Go to Boot problem resolution.

---

**CA00E15F**

**Explanation:** Adapter VPD evaluation

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E170**

**Explanation:** Start of PCI bus probe

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E172**

**Explanation:** First pass of PCI device probe

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E174**

**Explanation:** Establishing host connection

**Response:**

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists:
    - a. Go to Checkout procedure.
    - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.
-



---

**CA00E175**

**Explanation:** Bootp request

**Response:**

1. Verify that:
  - The bootp server is correctly configured; then, retry the operation.
  - The network connections are correct; then, retry the operation.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E176**

**Explanation:** TFTP file transfer

**Response:**

1. Verify that:
  - The bootp server is correctly configured; then, retry the operation.
  - The network connections are correct; then, retry the operation.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E177**

**Explanation:** Transfer failure due to TFTP error condition

**Response:**

1. Verify that:
  - The bootp server is correctly configured; then, retry the operation.
  - The network connections are correct; then, retry the operation.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E178**

**Explanation:** Initiating TFTP file transfer

**Response:**

1. Verify that:
  - The bootp server is correctly configured; then, retry the operation.
  - The network connections are correct; then, retry the operation.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E179**

**Explanation:** Closing BOOTP

**Response:**

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists:
    - a. Go to Checkout procedure.
    - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E17B**

**Explanation:** Microprocessor clock speed measurement

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E198**

**Explanation:** The system is rebooting to enact changes that were specified in ibm,client-architecture-support

**Response:** Go to Boot problem resolution.

---

**CA00E199**

**Explanation:** The system is rebooting to enact changes that were specified in the boot image ELF header

**Response:**

1. Verify that:
    - The bootp server is correctly configured; then, retry the operation.
    - The network connections are correct; then, retry the operation.
  2. If the problem persists:
    - a. Go to Checkout procedure.
    - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E19A**

**Explanation:** NVRAM auto-boot? variable not found - assume FALSE

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E19B**

**Explanation:** NVRAM menu? variable not found - assume FALSE

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E19D**

**Explanation:** Create NVRAM node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A0**

**Explanation:** User requested boot to SMS menus using keyboard entry

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A1**

**Explanation:** User requested boot to open firmware prompt using keyboard entry

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A2**

**Explanation:** User requested boot using default service mode boot list using keyboard entry

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A3**

**Explanation:** User requested boot using customized service mode boot list using keyboard entry

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E1A4**

**Explanation:** User requested boot to SMS menus

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A5**

**Explanation:** User requested boot to open firmware prompt

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A6**

**Explanation:** User requested boot using default service mode boot list

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1A7**

**Explanation:** User requested boot using customized service mode boot list

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1AA**

**Explanation:** System boot check for NVRAM settings

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1AB**

**Explanation:** System booting using default service mode boot list

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E1AC**

**Explanation:** System booting using customized service mode boot list

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1AD**

**Explanation:** System booting to the operating system

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1AE**

**Explanation:** System booted to SMS multiboot menu using NVRAM settings

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1AF**

**Explanation:** System booted to SMS utilities menu using NVRAM settings

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1B1**

**Explanation:** System booting system-directed boot-device repair

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1B2**

**Explanation:** XOFF received, waiting for XON

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
-

### CA00E1B3

**Explanation:** XON received

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E1B4

**Explanation:** System-directed boot-string didn't load an operating system

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E1B5

**Explanation:** Checking for iSCSI disk aliases

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E1D0

**Explanation:** Create PCI self configuring SCSI device (SCSD) node

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E1D3

**Explanation:** Create SCSD block device node (SD)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### CA00E1D4

**Explanation:** Create SCSD byte device node (ST)

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E1DC**

**Explanation:** Dynamic console selection

**Response:**

1. Verify the video session and the SOL session. The console might be redirected to the video controller.
2. Start a remote control session or access the local KVM to see the status.
3. Go to Checkout procedure.
4. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E1DD**

**Explanation:** A graphics adapter has been selected as the firmware console, but the USB keyboard is not attached.

**Response:**

1. Verify that there is a USB keyboard attached to a USB port that is assigned to the partition.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E1F0**

**Explanation:** Start out-of-box experience

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E1F1**

**Explanation:** Start self test sequence on one or more devices

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E1F2**

**Explanation:** Power on password prompt

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E1F3**

**Explanation:** Privileged-access password prompt

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1F4**

**Explanation:** End self-test sequence on one or more boot devices; begin system management services

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1F5**

**Explanation:** Build boot device list

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1F6**

**Explanation:** Determine boot device sequence

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1F7**

**Explanation:** No boot image located

**Response:** Go to Boot problem resolution.

---

**CA00E1F8**

**Explanation:** Build boot device list for SCSD adapters. (The location code of the SCSD adapter being scanned is also displayed.)

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



---

**CA00E1F9**

**Explanation:** Build boot device list for fibre-channel adapters. (The location code of the SAN adapter being scanned is also displayed.)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1FA**

**Explanation:** Building device list for SCSD adapters. (The device ID and device LUN of the device being scanned is also displayed.)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1FB**

**Explanation:** Scan SCSD bus for attached devices

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1FC**

**Explanation:** Build boot device list for SSA adapters. (The location code of the SSA adapter being scanned is also displayed.)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E1FE**

**Explanation:** Building device list for fibre-channel (SAN) adapters. (The WWPN of the SAN adapter being scanned is also displayed.)

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E1FF**

**Explanation:** Build device list for fibre-channel (SAN) adapters. (The LUN of the SAN adapter being scanned is also displayed.)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E440**

**Explanation:** Validate NVRAM, initialize partitions as needed

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E441**

**Explanation:** Generate /options node NVRAM configuration variable properties

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E442**

**Explanation:** Validate NVRAM partitions

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E443**

**Explanation:** Generate NVRAM configuration variable dictionary words

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E444**

**Explanation:** The NVRAM size is less than 8K bytes

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E701**

**Explanation:** Create memory VPD

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E800**

**Explanation:** Initialize RTAS

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E810**

**Explanation:** Initializing ioconfig pfd

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E820**

**Explanation:** Initializing lpevent

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E830**

**Explanation:** Initializing event scan

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA00E840**

**Explanation:** Initializing hot plug

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E843**

**Explanation:** Initializing interface/AIX access

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E850**

**Explanation:** Initializing dynamic reconfiguration

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E860**

**Explanation:** Initializing sensors

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E865**

**Explanation:** Initializing VPD

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E870**

**Explanation:** Initializing pfds memory manager

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E875**

**Explanation:** Initializing rtas\_last\_error

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
-

---

**CA00E876**

**Explanation:** Initializing rtas\_error\_inject

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E877**

**Explanation:** Initializing dump interface

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E879**

**Explanation:** Initializing the platform-assisted kdump interface

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E885**

**Explanation:** Initializing set-power-level

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E886**

**Explanation:** Initializing exit2c

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E887**

**Explanation:** Initialize gdata for activate\_firmware

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**CA00E890**

**Explanation:** Starting to initialize open firmware

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00E891**

**Explanation:** Finished initializing open firmware

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA00EAA1**

**Explanation:** Probe PCI-PCI bridge bus

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA060203**

**Explanation:** An alias was modified or created

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA26FFFF**

**Explanation:** An extended item was required for lpevent to complete.

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**CA26TTSS**

**Explanation:** Waiting for lpevent of type tt and subtype ss.

**Response:**

1. Reboot the server.
2. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA279001**

**Explanation:** The firmware update image contains an update module that is not already on the system.

**Response:**

1. Look at the event log for a BA27xxxx error code to determine if a firmware installation error occurred.
2. If a firmware installation error did occur, resolve the problem.
3. Retry the firmware update.
4. If the problem persists:
  - a. Go to Checkout procedure.
  - b. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**CA2799FD**

**Explanation:** A firmware update module is being read.

**Response:** This checkpoint alternates in the control panel with CA2799FF.

This pair of checkpoints might stay in the display for up to 30 minutes with no indication of activity other than the alternating codes. Do not assume that the system is hung until the alternation stops and only one of the checkpoints remains in the control panel for at least 30 minutes, with no other indication of activity.

If the system is hung on this checkpoint, then CA2799FD and CA2799FF are not alternating and you must perform the following procedure:

1. Shut down the server.
2. Restart the server using the permanent boot image, as described in Starting the PERM image.
3. Use the Update and Manage System Flash menu to reject the temporary image.

---

**CA2799FF**

**Explanation:** A firmware update module is being written.

**Response:** This checkpoint alternates in the control panel with CA2799FD.

This pair of checkpoints might stay in the display for up to 30 minutes with no indication of activity other than the alternating codes. Do not assume that the system is hung until the alternation stops and only one of the checkpoints remains in the control panel for at least 30 minutes, with no other indication of activity. If the system is hung on this checkpoint, then CA2799FD and CA2799FF are not alternating and you must perform the following procedure:

1. Shut down the server.
2. Restart the server using the permanent boot image, as described in Starting the PERM image.
3. Use the Update and Manage System Flash menu to reject the temporary image.

## D1001XXX • D1011XXX

### D1xx1yyy service processor dump status codes:

D1xx1yyy service processor dump status codes indicate the cage or node ID that the dump component is processing, the node from which the hardware data is collected, and a counter that increments each time that the dump processor stores 4K of dump data.

Service processor dump status codes use the format, D1xx1yyy, where *xx* and *yyy* can be any number or letter.

The *xx* part of the code indicates the cage or node ID that the dump component is processing. The node varies depending on the node from which the hardware data is collected. The node is 0xFF when collecting the mainstore memory data.

The *yyy* part of the code is a counter that increments each time that the dump processor stores 4K of dump data.

The D1xx1yyy dump status codes below are the progress codes that might be displayed during the power-on self-test (POST), along with suggested actions to take if the system hangs on the progress code. Only when you experience a hang condition should you take any of the actions described for a progress code.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

---

#### D1001XXX

**Explanation:** Dump error data

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

#### D1011XXX

**Explanation:** Dump dump header

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



---

**D101C00F**

**Explanation:** No power off to allow debugging for CPU controls

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1021XXX**

**Explanation:** Dump dump header directory

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1031XXX**

**Explanation:** Dump dump header fips header

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1041XXX**

**Explanation:** Dump dump header entry header

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1051XXX**

**Explanation:** Dump core file for failing component

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1061XXX**

**Explanation:** Dump all NVRAM

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### D1071XXX

**Explanation:** Dump component trace for failing component

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1081XXX

**Explanation:** Dump component data from /opt/p0

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1091XXX

**Explanation:** Dump /opt/p1/\*

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1111XXX

**Explanation:** Dump /opt/p0/\*

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1121XXX

**Explanation:** Dump /opt/p1/\*

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1131XXX

**Explanation:** Dump all traces

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**D1141XXX**

**Explanation:** Dump code version

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1151XXX**

**Explanation:** Dump all /opt/p3 except rtbl

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1161XXX**

**Explanation:** Dump pddcustomize -r command

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1171XXX**

**Explanation:** Dump registry -l command

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1181XXX**

**Explanation:** Dump all /core/core.\* files

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1191XXX**

**Explanation:** Dump BDMP component trace (after dump if enough space)

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### D11A1XXX

**Explanation:** Dump any state information before dumping starts

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D11B1XXX

**Explanation:** Dump /proc filesystem

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D11C1XXX

**Explanation:** Dump mounted filesystem statistics

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D11D1XXX

**Explanation:** Dump environment

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1231XXX

**Explanation:** Dump update dump headers

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1241XXX

**Explanation:** Dump CRC1 calculation off

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**D1251XXX**

**Explanation:** Dump CRC1 calculation on

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1261XXX**

**Explanation:** Dump CRC2 calculation off

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1271XXX**

**Explanation:** Dump CRC2 calculation on

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1281XXX**

**Explanation:** Dump output the calculated CRC1 (dump headers)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1291XXX**

**Explanation:** Dump output the calculated CRC2 (data and data headers)

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D12A1XXX**

**Explanation:** Jump to the position in dump directly after CRC1

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### D12B1XXX

**Explanation:** Initialize the headers dump time and serial numbers

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D12C1XXX

**Explanation:** Display final SRC to panel

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D12D1XXX

**Explanation:** Rmove /core/core.app.time.pid

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D12E1XXX

**Explanation:** Remove /core/core.\*

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D12F1XXX

**Explanation:** Display beginning SRC to panel

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1301XXX

**Explanation:** Turn off error log capture into dump

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**D1311XXX**

**Explanation:** Turn on error log capture into dump

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1321XXX**

**Explanation:** Store information about existing core files

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1381XXX**

**Explanation:** Invalidate the dump

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1391XXX**

**Explanation:** Check for valid dump sequence

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D13A1XXX**

**Explanation:** Get dump identity sequence

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D13B1XXX**

**Explanation:** Get dump length sequence

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**D1FF1XXX**

**Explanation:** Dump complete

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3YYY**

**Explanation:** Platform dump status codes are described in D1xx3y01 to D1xx3yF2 Service processor dump codes

**Response:**

**D1xx3yzz service processor dump codes:**

These D1xx3yzz service processor dump codes use the format: D1xx3yzz, where *xx* indicates the cage or node ID that the dump component is processing, *y* increments from 0 to F to indicate that the system is not hung, and *zz* indicates the command being processed.

The D1xx3yzz dump codes below are the progress codes that might be displayed during the power-on self-test (POST), along with suggested actions to take if the system hangs on the progress code. Only when you experience a hang condition should you take any of the actions described for a progress code.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, "Parts listing for IBM Flex System p24L Compute Node," on page 79 to determine which components are CRUs and which components are FRUs.

---

**D1XX3Y01**

**Explanation:** Get SCOM

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3Y02**

**Explanation:** Get scan ring

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.



---

**D1XX3Y03**

**Explanation:** Get array values

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3Y04**

**Explanation:** Stop the clocks

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3Y05**

**Explanation:** Flush the cache

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3Y06**

**Explanation:** Get CFAM

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3Y07**

**Explanation:** Put SCOM

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XX3Y08**

**Explanation:** Send command

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

### D1XX3Y09

**Explanation:** Get optimized cache

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1XX3Y0A

**Explanation:** Get general purpose (GP) register

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1XX3Y0B

**Explanation:** Processor clean-up

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1XX3Y0C

**Explanation:** Get JTAG register

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1XX3Y0D

**Explanation:** Stop clocks without quiescing

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

### D1XX3YF0

**Explanation:** Memory collection set-up

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**D1XX3YF1**

**Explanation:** Memory collection DMA step

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**D1XX3YF2**

**Explanation:** Memory collection cleanup

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**D1xx9yyy to D1xxCyyy service processor power-off checkpoints:**

These D1xx service processor power-off status codes offer information about the status of the service processor during a power-off operation.

The D1xx power-off status codes below are the progress codes that might be displayed during the power-on self-test (POST), along with suggested actions to take if the system hangs on the progress code. Only when you experience a hang condition should you take any of the actions described for a progress code.

If the system hangs on a progress code, follow the suggested actions in the order in which they are listed until the problem is solved. If an action solves the problem, you can stop performing the remaining actions. See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.

---

**D1XX900C**

**Explanation:** Breakpoint set in CPU controls has been hit

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

---

**D1XXB0FF**

**Explanation:** Request to initiate power-off program has been sent

**Response:**

1. Go to Checkout procedure.
2. Replace the system-board, as described in Replacing the system-board and chassis assembly.

**D1XXC000**

**Explanation:** Indicates a message is ready to send to the hypervisor to power off

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XXC001**

**Explanation:** Waiting for the hypervisor to acknowledge the delayed power off notification

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XXC002**

**Explanation:** Waiting for the hypervisor to send the power off message

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**D1XXC003**

**Explanation:** Hypervisor handshaking is complete

**Response:**

1. Go to Checkout procedure.
  2. Replace the system-board, as described in Replacing the system-board and chassis assembly.
- 

**Service request numbers (SRNs)**

Service request numbers (SRNs) are error codes that the operating system generates. The codes have three or four digits, a hyphen, and three or four digits after the hyphen. SRNs can be viewed using the Linux service aid “diagela” if it is installed.

**Note:** The “diagela” service aid is part of the Linux service aids for hardware diagnostics. The service aids are separate from the operating system and are available for download from the Service and productivity tools for Linux systems site.

**Using the SRN tables:**

The service request number (SRN) list is in numerical sequence. The failing function codes (FFCs) are provided to aid in locating a failing component.

**Procedure**

1. Look up a service request number when you see an error code with a hyphen.

The SRN is in the first column of the SRN table in numerical order.

The SRN might have an associated FFC number. Possible FFC values for SRNs are displayed in the second column of the table. FFC numbers might be the first three digits of the SRN or the last three digits, or might not be in the SRN.

The third column describes the problem and an action to take to try to fix the problem. The description also includes how to find the FFC number for an SRN if one exists.

2. See “Failing function codes” on page 409 for a description of each FFC value.
3. If the SRN does not appear in the table, see “Solving undetermined problems” on page 457.

#### 101-711 through FFC-725 SRNs:

The AIX® operating system might generate service request numbers (SRNs) from 101-711 to FFC-725.

Replace any parts in the order that the codes are listed.

---

#### 101-711

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_711
- 

#### 101-712

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_712
- 

#### 101-713

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_713

**101-714**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_714
- 

**101-715**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_715
- 

**101-716**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_716
- 

**101-717**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_717

---

**101-718**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_718
- 

**101-719**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_719
- 

**101-720**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_720
- 

**101-721**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_721

**101-722**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_722
- 

**101-723**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_723
- 

**101-724**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_724
- 

**101-725**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_725



---

**101-726**

**Explanation:** The system hung while trying to configure an unknown resource.

1. Run the stand-alone diagnostics problem determination procedure.
2. If the problem remains, refer to Failing function codes to find the FFC that matches the last three digits of the SRN.
3. Suspect the device adapter or device itself.

**Response:**

**Failing Item:**

- FFC\_726
- 

**101-888**

**Explanation:** The system does not IPL. Go to Performing the checkout procedure or undetermined problem procedure.

**Response:**

**Failing Item:**

- FFC\_210
  - FFC\_227
- 

**103-151**

**Explanation:** The time-of-day battery failed.

1. Go to Removing the battery to start the battery replacement procedure.
2. Go to Installing the battery to complete the procedure.

**Response:**

**Failing Item:**

- FFC\_151
- 

**109-200**

**Explanation:** The system crashed while you running it.

1. Go to Performing the checkout procedure.
2. If the 8-digit error and location codes were NOT reported, run AIX diagnostics in problem determination procedure and record and report the 8-digit error and location codes for this SRN.

**Response:**

---

**110-101**

**Explanation:** The diagnostics did not detect an installed resource. If this SRN appeared when running concurrent diagnostics, then run concurrent diagnostics using the diag -a command.

**Response:**

---

**110-921**

**Explanation:** The system halted while diagnostics were executing.

Go to Performing the checkout procedure or problem resolution.

Note: xxx corresponds to the last three digits of the SRN.

**Response:**

**Failing Item:**

- FFC\_812
  - FFC\_XXX
- 

**110-922**

**Explanation:** The system halted while diagnostics were executing.

Go to Performing the checkout procedure or problem resolution.

Note: xxx corresponds to the last three digits of the SRN.

**Response:**

**Failing Item:**

- FFC\_812
  - FFC\_XXX
- 

**110-923**

**Explanation:** The system halted while diagnostics were executing.

Go to Performing the checkout procedure or problem resolution.

Note: xxx corresponds to the last three digits of the SRN.

**Response:**

**Failing Item:**

- FFC\_812
- FFC\_XXX

---

**110-924**

**Explanation:** The system halted while diagnostics were executing.

Go to Performing the checkout procedure or problem resolution.

Note: xxx corresponds to the last three digits of the SRN.

**Response:**

**Failing Item:**

- FFC\_812
- FFC\_XXX

---

**110-925**

**Explanation:** The system halted while diagnostics were executing.

Go to Performing the checkout procedure or problem resolution.

Note: xxx corresponds to the last three digits of the SRN.

**Response:**

**Failing Item:**

- FFC\_812
- FFC\_XXX

---

**110-926**

**Explanation:** The system halted while diagnostics were executing.

Go to Performing the checkout procedure or problem resolution.

Note: xxx corresponds to the last three digits of the SRN.

**Response:**

**Failing Item:**

- FFC\_812
- FFC\_XXX

---

**110-935**

**Explanation:** The system halted while diagnostics were executing. Use the problem determination procedure.

**Response:**

**Failing Item:**

- FFC\_812

### 111-107

**Explanation:** A machine check occurred. Go to Performing the checkout procedure.

**Response:**

---

### 111-108

**Explanation:** An encoded SRN was displayed. Go to Performing the checkout procedure.

**Response:**

---

### 111-121

**Explanation:** There is a display problem. Go to Performing the checkout procedure.

**Response:**

---

### 111-78C

**Explanation:** PCI adapter I/O bus problem. Go to Performing the checkout procedure. Perform Solving undetermined problems.

**Response:**

**Failing Item:**

- FFC\_227
- 

### 111-999

**Explanation:** System does not perform a soft reset. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_210
- 

### 650-XXX

**Explanation:** Disk drive configuration failed. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_650

---

**651-199**

**Explanation:** This is a test of the flow of a serviceable event from this system to management console. This is not a real problem.

**Response:**

**Problem determination:** Use the management console to list serviceable events and verify the serviceable event was sent to the HMC.

---

**652-600**

**Explanation:** A non-critical error has been detected: uncorrectable memory or unsupported memory. Schedule deferred maintenance. Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory modules.

**Response:**

---

**652-610**

**Explanation:** A non-critical error has been detected: CPU internal error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_210
- 

**652-611**

**Explanation:** A non-critical error has been detected: CPU internal cache or cache controller error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_210
- 

**652-612**

**Explanation:** A non-critical error has been detected: external cache parity or multi-bit ECC error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_D01

**652-613**

**Explanation:** A non-critical error has been detected: external cache ECC single-bit error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_D01

---

**652-623**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C6

---

**652-630**

**Explanation:** A non-critical error has been detected: I/O expansion bus parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_307

---

**652-631**

**Explanation:** A non-critical error has been detected: I/O expansion bus time-out error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_307

---

**652-632**

**Explanation:** A non-critical error has been detected: I/O expansion bus connection failure. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_307

---

**652-633**

**Explanation:** A non-critical error has been detected: I/O expansion unit not in an operating state. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_307
- 

**652-634**

**Explanation:** A non-critical error has been detected: internal device error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_307
- 

**652-664**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_302
- 

**652-665**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_303
- 

**652-666**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_304

**652-669**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred G maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2CD
- 

**652-66A**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2CE
- 

**652-66B**

**Explanation:** A non-critical error has been detected: correctable error threshold exceeded. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2CC
- 

**652-731**

**Explanation:** A non-critical error has been detected: intermediate or system bus address parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C8
- 

**652-732**

**Explanation:** A non-critical error has been detected: intermediate or system bus data parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C8



---

**652-733**

**Explanation:** A non-critical error has been detected: intermediate or system bus address parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C8
- FFC\_292

---

**652-734**

**Explanation:** A non-critical error has been detected: intermediate or system bus data parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C8
- FFC\_292

---

**652-735**

**Explanation:** A non-critical error has been detected: intermediate or system bus time-out error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2D2
- FFC\_292

---

**652-736**

**Explanation:** A non-critical error has been detected: intermediate or system bus time-out error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2D2
- FFC\_292

**652-770**

**Explanation:** A non-critical error has been detected: intermediate system bus address parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C8
- FFC\_292

---

**652-771**

**Explanation:** A non-critical error has been detected: intermediate or system bus data parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2C8
- FFC\_292

---

**652-772**

**Explanation:** A non-critical error has been detected: intermediate or system bus time-out error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2D2
- FFC\_292

---

**652-773**

**Explanation:** A non-critical error has been detected: intermediate or system bus data parity error. Schedule deferred maintenance. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_227

---

**652-88X**

**Explanation:** The CEC or SPCN reported a non-critical error.

1. Schedule deferred maintenance.
2. Refer to the entry MAP in this system unit system service guide, with the 8-digit error and location codes, for the necessary repair action.
3. If the 8-digit error and location codes were NOT reported, then run diagnostics in problem determination mode and record and report the 8-digit error and location codes for this SRN.

**Response:**

---

**652-89X**

**Explanation:** The CEC or SPCN reported a non-critical error.

1. Schedule deferred maintenance.
2. Refer to the entry MAP in this system unit system service guide, with the 8-digit error and location codes, for the necessary repair action.
3. If the 8-digit error and location codes were NOT reported, then run diagnostics in problem determination mode and record and report the 8-digit error and location codes for this SRN.

**Response:**

---

**814-112**

**Explanation:** The NVRAM test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_814
- 

**814-113**

**Explanation:** The VPD test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_221
- 

**814-114**

**Explanation:** I/O Card NVRAM test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_814
- 

**815-100**

**Explanation:** The floating-point processor test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_815

---

**815-101**

**Explanation:** Floating point processor failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_815

---

**815-102**

**Explanation:** Floating point processor failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_815

---

**815-200**

**Explanation:** Power-on self-test indicates a processor failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_815
- FFC\_7C0

---

**815-201**

**Explanation:** Processor has a status of failed. Processors with a failed status are deconfigured and therefore cannot be tested or used by the system. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_815

---

**817-123**

**Explanation:** The I/O planar time-of-day clock test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817

---

**817-124**

**Explanation:** Time of day RAM test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817
- 

**817-210**

**Explanation:** The time-of-day clock is at POR. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817
- 

**817-211**

**Explanation:** Time of day POR test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817
- 

**817-212**

**Explanation:** The battery is low. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_151
- 

**817-213**

**Explanation:** The real-time clock is not running. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817
- 

**817-215**

**Explanation:** Time of day clock not running test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817

**817-217**

**Explanation:** Time of day clock not running. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_817
- 

**887-101**

**Explanation:** POS register test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-102**

**Explanation:** 887I/O register test failed. Go to Performing the checkout procedure.

**Response:**

---

**887-103**

**Explanation:** Local RAM test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-104**

**Explanation:** Vital Product Data (VPD) failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-105**

**Explanation:** LAN coprocessor internal tests failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-106**

**Explanation:** Internal loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-107**

**Explanation:** External loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-108**

**Explanation:** External loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-109**

**Explanation:** External loopback parity tests failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-110**

**Explanation:** External loopback fairness test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-111**

**Explanation:** External loopback fairness and parity tests failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-112**

**Explanation:** External loopback (twisted pair) test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-113**

**Explanation:** External loopback (twisted pair) parity test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-114**

**Explanation:** Ethernet loopback (twisted pair) fairness test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-115**

**Explanation:** External loopback (twisted pair) fairness and parity tests failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-116**

**Explanation:** Twisted pair wrap data failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887



---

**887-117**

**Explanation:** Software device configuration fails. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-118**

**Explanation:** Device driver indicates a hardware problem. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-120**

**Explanation:** Device driver indicates a hardware problem. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-121**

**Explanation:** Ethernet transceiver test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_B08
- 

**887-122**

**Explanation:** Ethernet 10 base-2 transceiver test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_B09
- 

**887-123**

**Explanation:** Internal loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

**887-124**

**Explanation:** Software error log indicates a hardware problem. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-125**

**Explanation:** Fuse test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-202**

**Explanation:** Vital Product Data test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-203**

**Explanation:** Vital Product Data test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-209**

**Explanation:** RJ-45 converter test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-304**

**Explanation:** Coprocessor internal test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

---

**887-305**

**Explanation:** Internal loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-306**

**Explanation:** Internal loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-307**

**Explanation:** External loopback test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-319**

**Explanation:** Software device driver indicates a hardware failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-400**

**Explanation:** Fuse test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-401**

**Explanation:** Circuit breaker for Ethernet test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887

**887-402**

**Explanation:** Ethernet 10 Base-2 transceiver test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-403**

**Explanation:** Ethernet 10 Base-T transceiver test failed. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**887-405**

**Explanation:** Ethernet- network Rerun diagnostics in advanced mode for accurate problem determination. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_887
- 

**101-2020**

**Explanation:** The system hung while trying to configure the InfiniBand Communication Manager. This problem may be attributed to software. Report this problem to the AIX Support Center.

**Response:**

---

**101-2021**

**Explanation:** The system hung while trying to configure the InfiniBand TCP/IP Interface. This problem may be attributed to software. Report this problem to the AIX Support Center.

**Response:**

---

**101-XXXX**

**Explanation:** 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. Go to undetermined problem procedure.

**Response:**

**Failing Item:**

- FFC\_XXXX

---

**110-XXXX**

**Explanation:** The system halted while diagnostics were executing.

Note: xxxx corresponds to the last three or four digits of the SRN following the dash (-).

1. If your 110 SRN is not listed, substitute the last three or four digits of the SRN for xxxx and go to Failing function codes to identify the failing feature.
2. Run stand-alone diagnostics and the problem determination procedure for your operating system.

**Response:**

**Failing Item:**

- FFC\_XXXX
- FFC\_221

---

**252B-101**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B

---

**252B-710**

**Explanation:** Permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B

---

**252B-711**

**Explanation:** Adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B

**252B-712**

**Explanation:** Adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**252B-713**

**Explanation:** Adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**252B-714**

**Explanation:** Temporary adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**252B-715**

**Explanation:** Temporary adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B

---

**252B-716**

**Explanation:** PCI bus error detected by EEH.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
  - FFC\_293
- 

**252B-717**

**Explanation:** PCI bus error detected by adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
  - FFC\_293
- 

**252B-718**

**Explanation:** Temporary PCI bus error detected by adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- FFC\_293

**252B-719**

**Explanation:** Device bus termination power lost or not detected.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**252B-720**

**Explanation:** Adapter detected device bus failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**252B-721**

**Explanation:** Temporary adapter detected device bus failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**252B-722**

**Explanation:** Device bus interface problem.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B



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**252B-723**

**Explanation:** Device bus interface problem.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_252B
- 

**254E-201**

**Explanation:** Adapter configuration error. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254E
  - FFC\_221
- 

**254E-601**

**Explanation:** Error log analysis indicates adapter failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254
- 

**254E-602**

**Explanation:** Error log analysis indicates an error attention condition. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254
- 

**254E-603**

**Explanation:** Error log analysis indicates that the microcode could not be loaded on the adapter. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254

**254E-604**

**Explanation:** Error log analysis indicates a permanent adapter failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254
- 

**254E-605**

**Explanation:** Error log analysis indicates permanent adapter failure is reported on the other port of this adapter. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254
- 

**254E-606**

**Explanation:** Error log analysis indicates adapter failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254
- 

**254E-701**

**Explanation:** Error log analysis indicates permanent adapter failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254E
  - FFC\_221
- 

**254E-702**

**Explanation:** Error log analysis indicates permanent adapter failure is reported on the other port of this adapter. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_254E
- FFC\_221

---

**2567-XXX**

**Explanation:** USB integrated system-board and chassis assembly. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2567
- 

**256D-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
  - FFC\_221
- 

**256D-601**

**Explanation:** Error log analysis indicates adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
- 

**256D-602**

**Explanation:** Error log analysis indicates an error attention condition.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D

**256D-603**

**Explanation:** Error Log Analysis indicates that the microcode could not be loaded on the adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
- 

**256D-604**

**Explanation:** Error Log Analysis indicates a permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
  - FFC\_210
- 

**256D-605**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
- 

**256D-606**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D

---

**256D-701**

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
  - FFC\_221
- 

**256D-702**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_256D
  - FFC\_221
- 

**25C4-201**

**Explanation:** Configuration error. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_25C4
- 

**25C4-601**

**Explanation:** Download firmware error. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_25C4

---

**25C4-602**

**Explanation:** EEPROM read error. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_25C4

---

**25C4-701**

**Explanation:** Permanent adapter failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_25C4

---

**25C4-XXX**

**Explanation:** Generic reference for Broadcom adapter. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_25C4

---

**2604-102**

**Explanation:** Reset Test failure for the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-103**

**Explanation:** Register Test failure for the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-104**

**Explanation:** SRAM Test failure for the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-105**

**Explanation:** Internal Wrap Test failure for the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-106**

**Explanation:** Gigabit Link Module (GLM) Wrap Test failure for the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-108**

**Explanation:** Enhanced Error Handling Failure on the bus for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604
- FFC\_221

---

**2604-110**

**Explanation:** Enhanced Error Handling Failure on the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-201**

**Explanation:** Configuration Register Test Failure for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604
- FFC\_221

**2604-203**

**Explanation:** PCI Wrap Test Failure for the Fibre Channel adapter card. Replace the 4Gb Fibre Channel Adapter card.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-204**

**Explanation:** DMA Test Failure for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604
- FFC\_221

---

**2604-205**

**Explanation:** Error on Read/Write Operation for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604
- FFC\_221

---

**2604-701**

**Explanation:** Error Log Analysis indicates that the adapter self-test failed for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-703**

**Explanation:** Error Log Analysis indicates that an unknown adapter error has occurred for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604



---

**2604-704**

**Explanation:** Error Log Analysis indicates that an adapter error has occurred for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-705**

**Explanation:** Error Log Analysis indicates that a parity error has been detected for the Fibre Channel adapter card. The adapter must be replaced immediately. Failure to do so could result in data being read or written incorrectly.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-706**

**Explanation:** Error Log Analysis indicates that a fatal hardware error has occurred for the Fibre Channel adapter card.

This adapter was successfully taken off-line. It will remain off-line until reconfigured or the system is rebooted. This adapter must be replaced and not brought back on-line. Failure to adhere to this action could result in data being read or written incorrectly or in the loss of data.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2604-XXX**

**Explanation:** Generic reference for 4Gb Fibre Channel Adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2604

---

**2607-102**

**Explanation:** Reset Test failure for the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-103**

**Explanation:** Register Test failure for the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-104**

**Explanation:** SRAM Test failure for the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-105**

**Explanation:** Internal Wrap Test failure for the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-106**

**Explanation:** Gigabit Link Module (GLM) Wrap Test failure for the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-108**

**Explanation:** Enhanced Error Handling Failure on the bus for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- FFC\_221

---

**2607-110**

**Explanation:** Enhanced Error Handling Failure on the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-201**

**Explanation:** Configuration Register Test Failure for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- FFC\_221

---

**2607-203**

**Explanation:** PCI Wrap Test Failure for the Fibre Channel adapter card. Replace the 8Gb PCIe Fibre Channel Expansion Card.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-204**

**Explanation:** DMA Test Failure for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- FFC\_221

---

**2607-205**

**Explanation:** Error on Read/Write Operation for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- FFC\_221

**2607-701**

**Explanation:** Error Log Analysis indicates that the adapter self-test failed for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- 

**2607-703**

**Explanation:** Error Log Analysis indicates that an unknown adapter error has occurred for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- 

**2607-704**

**Explanation:** Error Log Analysis indicates that an adapter error has occurred for the Fibre Channel adapter card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607
- 

**2607-705**

**Explanation:** Error Log Analysis indicates that a parity error has been detected for the Fibre Channel adapter card. The adapter must be replaced immediately. Failure to do so could result in data being read or written incorrectly.

**Response:**

**Failing Item:**

- FFC\_2607
- 

**2607-706**

**Explanation:** Error Log Analysis indicates that a fatal hardware error has occurred for the Fibre Channel adapter card.

This adapter was successfully taken off-line. It will remain off-line until reconfigured or the system is rebooted. This adapter must be replaced and not brought back on-line. Failure to adhere to this action could result in data being read or written incorrectly or in the loss of data.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2607-XXX**

**Explanation:** Generic reference for 8Gb PCIe Fibre Channel Expansion Card. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2607

---

**2624-101**

**Explanation:** Configuration failure. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-102**

**Explanation:** Queue pair create failure. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-103**

**Explanation:** Loop back test failure. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-201**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.

**Response:**

**Failing Item:**

- CABLE
- NETWORK

**2624-301**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.
5. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- CABLE
  - NETWORK
  - FFC\_2624
- 

**2624-701**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to an internal error. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624
- 

**2624-702**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a failure with the uplink interface used to connect this device to the host processor. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624
- 

**2624-703**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-704**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a unrecoverable internal parity error. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-705**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a internal error. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-706**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the 4X PCI-E DDR InfiniBand Host Channel Adapter.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2624-XXX**

**Explanation:** Generic reference for 4X PCI-E DDR InfiniBand Host Channel Adapter. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2624

---

**2625-101**

**Explanation:** Configuration failure. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-102**

**Explanation:** Queue pair create failure. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-103**

**Explanation:** Loop back test failure. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-201**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.

**Response:**

**Failing Item:**

- CABLE
- NETWORK

---

**2625-301**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.
5. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- CABLE
- NETWORK
- FFC\_2625



---

**2625-701**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to an internal error. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-702**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a failure with the uplink interface used to connect this device to the host processor. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-703**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-704**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a unrecoverable internal parity error. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

---

**2625-705**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a internal error. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625

**2625-706**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the 2-port QDR 40 GB/S InfiniBand expansion card (CFFh).

**Response:**

**Failing Item:**

- FFC\_2625
- 

**2625-XXX**

**Explanation:** Generic reference for 2-port QDR 40 GB/S InfiniBand expansion card (CFFh). Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2625
- 

**2627-101**

**Explanation:** Configuration failure. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627
- 

**2627-102**

**Explanation:** Queue pair create failure. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627
- 

**2627-103**

**Explanation:** Loop back test failure. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627

---

**2627-201**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.

**Response:**

**Failing Item:**

- CABLE
- NETWORK

---

**2627-301**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.
5. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- CABLE
- NETWORK
- FFC\_2627

---

**2627-701**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to an internal error. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627

---

**2627-702**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a failure with the uplink interface used to connect this device to the host processor. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627

**2627-703**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627
- 

**2627-704**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a unrecoverable internal parity error. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627
- 

**2627-705**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a internal error. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627
- 

**2627-706**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the IBM Flex System IB6132 QDR InfiniBand Adapter.

**Response:**

**Failing Item:**

- FFC\_2627
- 

**2640-121**

**Explanation:** Physical volume hardware error. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2640

---

**2640-131**

**Explanation:** Smart status threshold exceeded. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2640
- 

**2640-132**

**Explanation:** Command timeouts threshold exceeded. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2640
- 

**2640-133**

**Explanation:** Command timeout with error condition. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2640
- 

**2640-134**

**Explanation:** Hardware command or DMA failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2640
- 

**2640-136**

**Explanation:** Timeout waiting for controller or drive with no busy status. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2640
  - FFC\_2631
-

**268B-102**

**Explanation:** An unrecoverable media error occurred. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-104**

**Explanation:** The motor failed to restart. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-105**

**Explanation:** The drive did not become ready. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-106**

**Explanation:** The electronics card test failed. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-108**

**Explanation:** The bus test failed. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-110**

**Explanation:** The media format is corrupted. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B

---

**268B-112**

**Explanation:** The diagnostic test failed. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-114**

**Explanation:** An unrecoverable hardware error. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-116**

**Explanation:** A protocol error.

1. Make sure that the firmware of the FRUs shown and the parent adapter, are compatible with the diagnostic and application software levels.
2. If you do not find a problem, call your operating-system support person.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-117**

**Explanation:** A write-protect error occurred. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-118**

**Explanation:** A SCSI command time-out occurred. Replace the 300 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_268B
- FFC\_B88

---

**268B-120**

**Explanation:** A SCSI busy or command error. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B

---

**268B-122**

**Explanation:** A SCSI reservation conflict error. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B

---

**268B-124**

**Explanation:** A SCSI check condition error occurred. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B

---

**268B-126**

**Explanation:** A software error was caused by a hardware failure. Replace the 300 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_268B
- FFC\_B88

---

**268B-128**

**Explanation:** The error log analysis indicates a hardware failure. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_268B



---

**268B-129**

**Explanation:** Error log analysis indicates a SCSI bus problem. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
  - FFC\_268B
- 

**268B-130**

**Explanation:** Error log analysis indicates a problem reported by the disk drive's self-monitoring function. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-132**

**Explanation:** A disk drive hardware error occurred. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-134**

**Explanation:** The adapter failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
  - SOFTWARE
- 

**268B-135**

**Explanation:** The device failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_268B
- FFC\_B88
- SOFTWARE

**268B-136**

**Explanation:** The certify operation failed. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-137**

**Explanation:** Unit attention condition has occurred on the Send Diagnostic command. Replace the 300 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_268B
  - FFC\_B88
- 

**268B-138**

**Explanation:** Error log analysis indicates that the disk drive is operating at a higher than recommended temperature.

1. Make sure that:
  - The ventilation holes in the blade server bezel are not blocked.
  - The Management Module event log is not reporting any system environmental warnings.
2. If the problem remains, call IBM support.

**Response:**

**Failing Item:**

- FFC\_268B
- 

**268B-140**

**Explanation:** Error log analysis indicates poor signal quality. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_268B

---

**268B-640**

**Explanation:** Error log analysis indicates a path error. Replace the 300 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_268B

---

**26B4-102**

**Explanation:** An unrecoverable media error occurred. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-104**

**Explanation:** The motor failed to restart. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-105**

**Explanation:** The drive did not become ready. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-106**

**Explanation:** The electronics card test failed. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-108**

**Explanation:** The bus test failed. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-110**

**Explanation:** The media format is corrupted. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-112**

**Explanation:** The diagnostic test failed. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-114**

**Explanation:** An unrecoverable hardware error. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-116**

**Explanation:** A protocol error.

1. Make sure that the firmware of the FRUs shown and the parent adapter, are compatible with the diagnostic and application software levels.
2. If you do not find a problem, call your operating-system support person.

**Response:**

**Failing Item:**

- FFC\_26B4
- FFC\_26BD

---

**26B4-117**

**Explanation:** A write-protect error occurred. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

---

**26B4-118**

**Explanation:** A SCSI command time-out occurred. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26B4
- FFC\_26BD
- FFC\_B88

---

**26B4-120**

**Explanation:** A SCSI busy or command error. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26B4
- FFC\_26BD

---

**26B4-122**

**Explanation:** A SCSI reservation conflict error. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26B4
- FFC\_26BD

---

**26B4-124**

**Explanation:** A SCSI check condition error occurred. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26B4
- FFC\_26BD

**26B4-126**

**Explanation:** A software error was caused by a hardware failure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:****Failing Item:**

- FFC\_26B4
- FFC\_26BD
- FFC\_B88

---

**26B4-128**

**Explanation:** The error log analysis indicates a hardware failure. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:****Failing Item:**

- FFC\_26BD
- FFC\_B88
- FFC\_26B4

---

**26B4-129**

**Explanation:** Error log analysis indicates a SCSI bus problem. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:****Failing Item:**

- FFC\_26BD
- FFC\_B88
- FFC\_26B4

---

**26B4-130**

**Explanation:** Error log analysis indicates a problem reported by the disk drive's self-monitoring function. Replace the 200 GB SATA Solid State Drive.

**Response:****Failing Item:**

- FFC\_26B4

---

**26B4-132**

**Explanation:** A disk drive hardware error occurred. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26B4
- FFC\_26BD

---

**26B4-134**

**Explanation:** The adapter failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- SOFTWARE

---

**26B4-135**

**Explanation:** The device failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- SOFTWARE
- FFC\_26B4
- FFC\_26BD
- FFC\_B88

---

**26B4-136**

**Explanation:** The certify operation failed. Replace the 200 GB SATA Solid State Drive.

**Response:**

**Failing Item:**

- FFC\_26B4

**26B4-137**

**Explanation:** Unit attention condition has occurred on the Send Diagnostic command. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:****Failing Item:**

- FFC\_26B4
  - FFC\_26BD
  - FFC\_B88
- 

**26B4-138**

**Explanation:** Error log analysis indicates that the disk drive is operating at a higher than recommended temperature.

1. Make sure that:
  - The ventilation holes in the blade server bezel are not blocked.
  - The Management Module event log is not reporting any system environmental warnings.
2. If the problem remains, call IBM support.

**Response:**

---

**26B4-140**

**Explanation:** Error log analysis indicates poor signal quality. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:****Failing Item:**

- FFC\_26BD
  - FFC\_B88
  - FFC\_26B4
- 

**26B4-640**

**Explanation:** Error log analysis indicates a path error. Replace the SAS to SATA Interposer Card. If the problem persists, replace the 200 GB SATA Solid State Drive.

**Response:****Failing Item:**

- FFC\_26B4
- FFC\_26BD



---

**26D2-102**

**Explanation:** An unrecoverable media error occurred. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-104**

**Explanation:** The motor failed to restart. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-105**

**Explanation:** The drive did not become ready. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-106**

**Explanation:** The electronics card test failed. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-108**

**Explanation:** The bus test failed. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-110**

**Explanation:** The media format is corrupted. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-112**

**Explanation:** The diagnostic test failed. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-114**

**Explanation:** An unrecoverable hardware error. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-116**

**Explanation:** A protocol error.

1. Make sure that the firmware of the FRUs shown and the parent adapter, are compatible with the diagnostic and application software levels.
2. If you do not find a problem, call your operating-system support person.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-117**

**Explanation:** A write-protect error occurred. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-118**

**Explanation:** A SCSI command time-out occurred. Replace the 600 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_26D2
- FFC\_B88

---

**26D2-120**

**Explanation:** A SCSI busy or command error. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-122**

**Explanation:** A SCSI reservation conflict error. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-124**

**Explanation:** A SCSI check condition error occurred. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-126**

**Explanation:** A software error was caused by a hardware failure. Replace the 600 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_26D2
  - FFC\_B88
- 

**26D2-128**

**Explanation:** The error log analysis indicates a hardware failure. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_26D2

**26D2-129**

**Explanation:** Error log analysis indicates a SCSI bus problem. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_26D2

---

**26D2-130**

**Explanation:** Error log analysis indicates a problem reported by the disk drive's self-monitoring function. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-132**

**Explanation:** A disk drive hardware error occurred. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2

---

**26D2-134**

**Explanation:** The adapter failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- SOFTWARE

---

**26D2-135**

**Explanation:** The device failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26D2
- FFC\_B88
- SOFTWARE

---

**26D2-136**

**Explanation:** The certify operation failed. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-137**

**Explanation:** Unit attention condition has occurred on the Send Diagnostic command. Replace the 600 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_26D2
  - FFC\_B88
- 

**26D2-138**

**Explanation:** Error log analysis indicates that the disk drive is operating at a higher than recommended temperature.

1. Make sure that:

- The ventilation holes in the blade server bezel are not blocked.
- The Management Module event log is not reporting any system environmental warnings.

2. If the problem remains, call IBM support.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D2-140**

**Explanation:** Error log analysis indicates poor signal quality. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_26D2

**26D2-640**

**Explanation:** Error log analysis indicates a path error. Replace the 600 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D2
- 

**26D7-102**

**Explanation:** An unrecoverable media error occurred. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-104**

**Explanation:** The motor failed to restart. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-105**

**Explanation:** The drive did not become ready. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-106**

**Explanation:** The electronics card test failed. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-108**

**Explanation:** The bus test failed. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-110**

**Explanation:** The media format is corrupted. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-112**

**Explanation:** The diagnostic test failed. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-114**

**Explanation:** An unrecoverable hardware error. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-116**

**Explanation:** A protocol error.

1. Make sure that the firmware of the FRUs shown and the parent adapter, are compatible with the diagnostic and application software levels.
2. If you do not find a problem, call your operating-system support person.

**Response:**

**Failing Item:**

- FFC\_26D7
- 

**26D7-117**

**Explanation:** A write-protect error occurred. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

**26D7-118**

**Explanation:** A SCSI command time-out occurred. Replace the 900 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_26D7
- FFC\_B88

---

**26D7-120**

**Explanation:** A SCSI busy or command error. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-122**

**Explanation:** A SCSI reservation conflict error. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-124**

**Explanation:** A SCSI check condition error occurred. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-126**

**Explanation:** A software error was caused by a hardware failure. Replace the 900 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_26D7
- FFC\_B88



---

**26D7-128**

**Explanation:** The error log analysis indicates a hardware failure. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_26D7

---

**26D7-129**

**Explanation:** Error log analysis indicates a SCSI bus problem. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_26D7

---

**26D7-130**

**Explanation:** Error log analysis indicates a problem reported by the disk drive's self-monitoring function. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-132**

**Explanation:** A disk drive hardware error occurred. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-134**

**Explanation:** The adapter failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- SOFTWARE

---

**26D7-135**

**Explanation:** The device failed to configure. Replace each part reported by the diagnostic program one at a time. Retry the diagnostic test after each part is replaced. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_26D7
- FFC\_B88
- SOFTWARE

---

**26D7-136**

**Explanation:** The certify operation failed. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-137**

**Explanation:** Unit attention condition has occurred on the Send Diagnostic command. Replace the 900 GB SFF SAS Hard Disk Drive. Run diagnostics again on the drive. If the error repeats, replace the 2nd FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_26D7
- FFC\_B88

---

**26D7-138**

**Explanation:** Error log analysis indicates that the disk drive is operating at a higher than recommended temperature.

1. Make sure that:
  - The ventilation holes in the blade server bezel are not blocked.
  - The Management Module event log is not reporting any system environmental warnings.
2. If the problem remains, call IBM support.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**26D7-140**

**Explanation:** Error log analysis indicates poor signal quality. Replace each part reported by the diagnostic program one at a time. Run the diagnostic program in problem determination mode on each part reported in the original SRN. If the problem persists, replace the next part in the list.

**Response:**

**Failing Item:**

- FFC\_B88
- FFC\_26D7

---

**26D7-640**

**Explanation:** Error log analysis indicates a path error. Replace the 900 GB SFF SAS Hard Disk Drive.

**Response:**

**Failing Item:**

- FFC\_26D7

---

**2710-101**

**Explanation:** Error Log Analysis indicates adapter function failure. Replace the Integrated USB Controller.

**Response:**

**Failing Item:**

- FFC\_2710

---

**2710-601**

**Explanation:** Error Log Analysis indicates adapter function failure. Replace the Integrated USB Controller.

**Response:**

**Failing Item:**

- FFC\_2710

---

**2750-201**

**Explanation:** Adapter configuration error Replace the PCIe2 16Gb 2-port FC Mezzanine Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2750
- FFC\_221

**2750-601**

**Explanation:** Adapter taken off-line. Replace the PCIe2 16Gb 2-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2750
- 

**2750-602**

**Explanation:** Adapter parity error Replace the PCIe2 16Gb 2-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2750
- 

**2750-603**

**Explanation:** Permanent adapter failure. Replace the PCIe2 16Gb 2-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2750
- 

**2750-604**

**Explanation:** Adapter down error Replace the PCIe2 16Gb 2-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2750
- 

**2755-201**

**Explanation:** Adapter configuration error Replace the PCIe2 16Gb 4-port FC Mezzanine Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2755
- FFC\_221

---

**2755-601**

**Explanation:** Adapter taken off-line. Replace the PCIe2 16Gb 4-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2755
- 

**2755-602**

**Explanation:** Adapter parity error Replace the PCIe2 16Gb 4-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2755
- 

**2755-603**

**Explanation:** Permanent adapter failure. Replace the PCIe2 16Gb 4-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2755
- 

**2755-604**

**Explanation:** Adapter down error Replace the PCIe2 16Gb 4-port FC Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2755
- 

**2770-101**

**Explanation:** Configuration failure. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770
- 

**2770-102**

**Explanation:** Queue pair create failure. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

**2770-103**

**Explanation:** Loop back test failure. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770
- 

**2770-201**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.

**Response:**

**Failing Item:**

- CABLE
  - NETWORK
- 

**2770-301**

**Explanation:** Loop back test failure. Do the following steps one at a time, in order, and rerun the test after each step:

1. Reseat the cable.
2. Replace the cable.
3. Verify that the network is functional.
4. Verify that the network switch is functional.
5. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- CABLE
  - NETWORK
  - FFC\_2770
- 

**2770-601**

**Explanation:** Error Log Analysis indicates adapter hardware error Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

**2770-602**

**Explanation:** Error Log Analysis indicates adapter configuration error Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

**2770-603**

**Explanation:** Error Log Analysis indicates adapter EEH service error Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

**2770-701**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to an internal error. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

**2770-702**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a failure with the uplink interface used to connect this device to the host processor. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

**2770-703**

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

### 2770-704

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a unrecoverable internal parity error  
Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

### 2770-705

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a internal error. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

### 2770-706

**Explanation:** Error Log Analysis indicates that this adapter has failed due to a memory error. Replace the IBM Flex System EN4132 2-port 10Gb RoCE Adapter

**Response:**

**Failing Item:**

- FFC\_2770

---

### 2D02-XXX

**Explanation:** Generic reference for USB controller/adapter - system-board and chassis assembly. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2631

---

### 2D14-101

**Explanation:** Adapter configuration error. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14



---

**2D14-710**

**Explanation:** Permanent controller error. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14
- 

**2D14-713**

**Explanation:** Controller error. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14
- 

**2D14-720**

**Explanation:** Controller device bus configuration error. Use MAP3150 to determine resolution.

**Response:**

---

**2D29-101**

**Explanation:** Adapter configuration error. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29
- 

**2D29-710**

**Explanation:** Permanent controller error. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29
- 

**2D29-713**

**Explanation:** Controller error. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29

**2D29-720**

**Explanation:** Controller device bus configuration error. Use MAP3150 to determine resolution.

**Response:**

---

**2E00-201**

**Explanation:** Configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E00
  - FFC\_221
- 

**2E00-601**

**Explanation:** EEPROM read error

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E00
- 

**2E00-701**

**Explanation:** Permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E00
- FFC\_221

---

**2E10-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
  - FFC\_221
- 

**2E10-601**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
- 

**2E10-602**

**Explanation:** Error Log Analysis indicates an Error Attention condition.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
- 

**2E10-603**

**Explanation:** Error Log Analysis indicates that the microcode could not be loaded on the adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10

### 2E10-604

**Explanation:** Error Log Analysis indicates a permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
- 

### 2E10-605

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
- 

### 2E10-606

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
- 

### 2E10-701

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
- FFC\_221

---

**2E10-702**

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E10
  - FFC\_221
- 

**2E13-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
  - FFC\_221
- 

**2E13-601**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
- 

**2E13-602**

**Explanation:** Error Log Analysis indicates an Error Attention condition.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13

**2E13-603**

**Explanation:** Error Log Analysis indicates that the microcode could not be loaded on the adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
- 

**2E13-604**

**Explanation:** Error Log Analysis indicates a permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
- 

**2E13-605**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
- 

**2E13-606**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13

---

**2E13-701**

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
  - FFC\_221
- 

**2E13-702**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E13
  - FFC\_221
- 

**2E14-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- FFC\_221

**2E14-601**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- 

**2E14-602**

**Explanation:** Error Log Analysis indicates an Error Attention condition.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- 

**2E14-603**

**Explanation:** Error Log Analysis indicates that the microcode could not be loaded on the adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- 

**2E14-604**

**Explanation:** Error Log Analysis indicates a permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14



---

**2E14-605**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- 

**2E14-606**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- 

**2E14-701**

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
  - FFC\_221
- 

**2E14-702**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E14
- FFC\_221

**2E15-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
  - FFC\_221
- 

**2E15-601**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
- 

**2E15-602**

**Explanation:** Error Log Analysis indicates an Error Attention condition.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
- 

**2E15-603**

**Explanation:** Error Log Analysis indicates that the microcode could not be loaded on the adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15

---

**2E15-604**

**Explanation:** Error Log Analysis indicates a permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
- 

**2E15-605**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
- 

**2E15-606**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
- 

**2E15-701**

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
- FFC\_221

### 2E15-702

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E15
  - FFC\_221
- 

### 2E16-201

**Explanation:** Adapter configuration error. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E16
  - FFC\_221
- 

### 2E16-601

**Explanation:** Error log analysis indicates adapter failure. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter.

**Response:**

**Failing Item:**

- FFC\_2E16
- 

### 2E16-602

**Explanation:** Error log analysis indicates an error attention condition. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter.

**Response:**

**Failing Item:**

- FFC\_2E16

---

**2E16-603**

**Explanation:** Error log analysis indicates that the microcode could not be loaded on the adapter. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter.

**Response:**

**Failing Item:**

- FFC\_2E16

---

**2E16-604**

**Explanation:** Error log analysis indicates a permanent adapter failure. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter.

**Response:**

**Failing Item:**

- FFC\_2E16

---

**2E16-605**

**Explanation:** Error log analysis indicates permanent adapter failure is reported on the other port of this adapter. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter.

**Response:**

**Failing Item:**

- FFC\_2E16

---

**2E16-606**

**Explanation:** Error log analysis indicates adapter failure. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter.

**Response:**

**Failing Item:**

- FFC\_2E16

---

**2E16-701**

**Explanation:** Error log analysis indicates permanent adapter failure. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E16
- FFC\_221

**2E16-702**

**Explanation:** Error log analysis indicates permanent adapter failure is reported on the other port of this adapter. Replace the IBM Flex System FC3172 2-port 8Gb FC Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E16
  - FFC\_221
- 

**2E21-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
  - FFC\_221
- 

**2E21-601**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
- 

**2E21-602**

**Explanation:** Error Log Analysis indicates an Error Attention condition.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21

---

**2E21-603**

**Explanation:** Error Log Analysis indicates that the microcode could not be loaded on the adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
- 

**2E21-604**

**Explanation:** Error Log Analysis indicates a permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
- 

**2E21-605**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
- 

**2E21-606**

**Explanation:** Error Log Analysis indicates adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21

**2E21-701**

**Explanation:** Error Log Analysis indicates permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
  - FFC\_221
- 

**2E21-702**

**Explanation:** Error Log Analysis indicates permanent adapter failure is reported on the other port of this adapter.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E21
  - FFC\_221
- 

**2E23-101**

**Explanation:** Register Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- 

**2E23-102**

**Explanation:** VPD Checksum Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23



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**2E23-103****Explanation:** Flash Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:****Failing Item:**

- FFC\_2E23
- 

**2E23-104****Explanation:** Internal Wrap Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:****Failing Item:**

- FFC\_2E23
- 

**2E23-105****Explanation:** External Wrap Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:****Failing Item:**

- FFC\_2E23
- 

**2E23-106****Explanation:** External Wrap with IP Checksum Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:****Failing Item:**

- FFC\_2E23

**2E23-107**

**Explanation:** External Wrap with TCP Checksum Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- 

**2E23-108**

**Explanation:** External Wrap with UDP Checksum Test Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- 

**2E23-109**

**Explanation:** Network link test failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_241
- 

**2E23-201**

**Explanation:** Enhanced Error Handling Failure

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- FFC\_221

---

**2E23-202**

**Explanation:** Network link test failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_241
  - FFC\_2E23
- 

**2E23-601**

**Explanation:** Error log analysis indicates a hardware error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- 

**2E23-602**

**Explanation:** Error log analysis indicates an EEH error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- 

**2E23-603**

**Explanation:** Error log analysis indicates an EEPROM error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23

**2E23-604**

**Explanation:** Error log analysis indicates transmission errors.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E23
- 

**2E28-201**

**Explanation:** Adapter configuration error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E28
  - FFC\_221
- 

**2E28-601**

**Explanation:** Adapter taken off-line. Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E28
- 

**2E28-602**

**Explanation:** Adapter parity error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E28
- 

**2E28-603**

**Explanation:** Permanent adapter failure. Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E28

---

**2E28-604**

**Explanation:** Adapter down error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E28

---

**2E29-201**

**Explanation:** Adapter configuration error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E29
- FFC\_221

---

**2E29-601**

**Explanation:** Adapter taken off-line. Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E29

---

**2E29-602**

**Explanation:** Adapter parity error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E29

---

**2E29-603**

**Explanation:** Permanent adapter failure. Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E29

#### 2E29-604

**Explanation:** Adapter down error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E29
- 

#### 2E33-201

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E33
  - FFC\_221
- 

#### 2E33-601

**Explanation:** Download firmware error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E33
- 

#### 2E33-602

**Explanation:** EEPROM read error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E33

---

**2E33-701**

**Explanation:** Permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E33
  - FFC\_221
- 

**2E34-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E34
  - FFC\_221
- 

**2E34-601**

**Explanation:** Download firmware error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E34
- 

**2E34-602**

**Explanation:** EEPROM read error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E34

**2E34-701**

**Explanation:** Permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E34
  - FFC\_221
- 

**2E35-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E35
  - FFC\_221
- 

**2E35-601**

**Explanation:** Download firmware error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E35
- 

**2E35-602**

**Explanation:** EEPROM read error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E35



---

**2E35-701**

**Explanation:** Permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E35
  - FFC\_221
- 

**2E36-201**

**Explanation:** Adapter configuration error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E36
  - FFC\_221
- 

**2E36-601**

**Explanation:** Download firmware error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E36
- 

**2E36-602**

**Explanation:** EEPROM read error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E36

**2E36-701**

**Explanation:** Permanent adapter failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2E36
  - FFC\_221
- 

**2E37-111**

**Explanation:** Enhanced Error Handling failure on bus. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37
- 

**2E37-112**

**Explanation:** Enhanced Error Handling failure while testing adapter. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E37
  - FFC\_221
- 

**2E37-140**

**Explanation:** DMA read test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37

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**2E37-141**

**Explanation:** DMA write test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37
- 

**2E37-142**

**Explanation:** DMA read-write test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37
- 

**2E37-151**

**Explanation:** Internal loopback test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37
- 

**2E37-152**

**Explanation:** Internal loopback IP checksum offload test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37
- 

**2E37-153**

**Explanation:** Internal loopback TCP checksum offload test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37

**2E37-154**

**Explanation:** Internal loopback UDP checksum offload test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37

---

**2E37-155**

**Explanation:** Internal loopback LSO test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37

---

**2E37-201**

**Explanation:** Registers test failed. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E37
- FFC\_221

---

**2E37-701**

**Explanation:** Adapter hardware error. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37

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**2E37-702**

**Explanation:** EEH service error. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E37
- FFC\_221

**2E37-703**

**Explanation:** Failure to initialize due to a problem while reading the EEPROM on the adapter. Replace the IBM Flex System EN4054 4-port 10Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E37
- 

**2E3D-101**

**Explanation:** PCI Configuration Registers Test Failure. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter. If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E3D
  - FFC\_221
- 

**2E3D-102**

**Explanation:** I/O Registers Test Failure. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E3D
- 

**2E3D-103**

**Explanation:** NVRAM and Checksum Verification Failure. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E3D
- 

**2E3D-104**

**Explanation:** Adapter Memory Test Failure. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter.

**Response:**

**Failing Item:**

- FFC\_2E3D

### 2E3D-111

**Explanation:** Internal Loopback Test Failure. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter

**Response:**

**Failing Item:**

- FFC\_2E3D
- 

### 2E3D-201

**Explanation:** Adapter configuration error. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E3D
  - FFC\_221
- 

### 2E3D-601

**Explanation:** Download firmware error. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter

**Response:**

**Failing Item:**

- FFC\_2E3D
- 

### 2E3D-602

**Explanation:** EEPROM read error. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter

**Response:**

**Failing Item:**

- FFC\_2E3D
- 

### 2E3D-701

**Explanation:** Permanent adapter failure. Replace the IBM Flex System EN2024 4-port 1Gb Ethernet Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E3D
- FFC\_221

---

**2E52-201**

**Explanation:** Adapter configuration error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E52
- FFC\_221

---

**2E52-605**

**Explanation:** Ethernet hardware error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E52

---

**2E52-606**

**Explanation:** Ethernet configuration error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E52

---

**2E52-607**

**Explanation:** EEH error Replace the IBM Flex System CN4058 8-port 10Gb Converged Adapter

**Response:**

**Failing Item:**

- FFC\_2E52

---

**2E53-201**

**Explanation:** Adapter configuration error. Replace the PCIe2 10Gb 8-port FCoe Mezzanine Adapter If the problem persists, replace the system board.

**Response:**

**Failing Item:**

- FFC\_2E53
- FFC\_221

---

**2E53-605**

**Explanation:** Ethernet hardware error. Replace the PCIe2 10Gb 8-port FCoe Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2E53

---

**2E53-606**

**Explanation:** Ethernet configuration error Replace the PCIe2 10Gb 8-port FCoe Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2E53

---

**2E53-607**

**Explanation:** Ethernet EEH error. Replace the PCIe2 10Gb 8-port FCoe Mezzanine Adapter

**Response:**

**Failing Item:**

- FFC\_2E53

---

**803-XXXX**

**Explanation:** A software error occurred while running the diagnostics which could be caused by either hardware or software.

**Response:** Note: This SRN can also occur if the filesystem 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). 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 FRU and use general problem resolution. 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 FRU list using the substituted digits as your FRU.

---

**950-2506**

**Explanation:** Missing options resolution for 3Gb SAS Adapter card.

Try each of the following steps. After reseating, removing, or replacing a part, retry the operation.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Reseat the 3Gb SAS Adapter card.
4. Replace the 3Gb SAS Adapter card.
5. Replace the system-board

**Response:**

**Failing Item:**

- FFC\_2506
- FFC\_221



---

**950-2D14**

**Explanation:** A resource was not detected that was previously installed. Check the Management Module event log for an system event. If there is not a system error, replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14

---

**950-2D29**

**Explanation:** A resource was not detected that was previously installed. Check the Management Module event log for an system event. If there is not a system error, replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29

---

**2506-102E**

**Explanation:** Reallocation failed due to disk out of alternate sectors. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_722

---

**2506-3002**

**Explanation:** Addressed device failed to respond to selection. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_722

---

**2506-3010**

**Explanation:** Disk returned wrong response to adapter. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_722

---

**2506-3020**

**Explanation:** Storage subsystem configuration error. Go to Performing the checkout procedure.

**Response:**

---

**2506-3100**

**Explanation:** Controller detected device bus interface error. Go to Performing the checkout procedure.

**Response:**

---

**2506-3109**

**Explanation:** Controller timed out a device command. Go to Performing the checkout procedure.

**Response:**

---

**2506-3110**

**Explanation:** Device bus interface error. Go to Performing the checkout procedure.

**Response:**

---

**2506-4010**

**Explanation:** Configuration error, incorrect connection between cascaded enclosures. Go to Performing the checkout procedure.

**Response:**

---

**2506-4020**

**Explanation:** Configuration error, connections exceed IOA design limits. Go to Performing the checkout procedure.

**Response:**

---

**2506-4030**

**Explanation:** Configuration error, incorrect multipath connection. Go to Performing the checkout procedure.

**Response:**

---

**2506-4040**

**Explanation:** Configuration error, incomplete multipath connection between controller and enclosure detected. Go to Performing the checkout procedure.

**Response:**

---

**2506-4041**

**Explanation:** Configuration error, incomplete multipath connection between enclosure and device detected. Go to Performing the checkout procedure.

**Response:**

---

**2506-4050**

**Explanation:** Attached enclosure does not support required multipath function. Go to Performing the checkout procedure.

**Response:**

---

**2506-4060**

**Explanation:** Multipath redundancy level got worse. Go to Performing the checkout procedure.

**Response:**

---

**2506-4100**

**Explanation:** Device bus fabric error. Go to Performing the checkout procedure.

**Response:**

---

**2506-4101**

**Explanation:** Temporary device bus fabric error. Go to Performing the checkout procedure.

**Response:**

---

**2506-4110**

**Explanation:** Unsupported enclosure function detected. Go to Performing the checkout procedure.

**Response:**

---

**2506-4150**

**Explanation:** PCI bus error detected by controller. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2506

**2506-4160**

**Explanation:** PCI bus error detected by controller. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2506
- 

**2506-7001**

**Explanation:** Temporary disk data error. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2506-8008**

**Explanation:** A permanent Cache Battery Pack failure occurred. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- BAT
- 

**2506-8009**

**Explanation:** Impending Cache Battery Pack failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- BAT
- 

**2506-8150**

**Explanation:** Controller failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2506
- 

**2506-8157**

**Explanation:** Temporary controller failure. Go to Performing the checkout procedure.

**Response:**

**Failing Item:**

- FFC\_2506

---

**2506-9000**

**Explanation:** Controller detected device error during configuration discovery. Go to Performing the checkout procedure.

**Response:**

---

**2506-9001**

**Explanation:** Controller detected device error during configuration discovery. Go to Performing the checkout procedure.

**Response:**

---

**2506-9002**

**Explanation:** Controller detected device error during configuration discovery. Go to Performing the checkout procedure.

**Response:**

---

**2506-9008**

**Explanation:** Controller does not support function expected for one or more disks. Go to Performing the checkout procedure.

**Response:**

---

**2506-9010**

**Explanation:** Cache data associated with attached disks cannot be found. Go to Performing the checkout procedure.

**Response:**

---

**2506-9011**

**Explanation:** Cache data belongs to disks other than those attached. Go to Performing the checkout procedure.

**Response:**

---

**2506-9020**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Go to Performing the checkout procedure.

**Response:**

**2506-9021**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9022**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9023**

**Explanation:** One or more Disk Array members are not at required physical locations. Go to Performing the checkout procedure.

**Response:**

---

**2506-9024**

**Explanation:** Physical location of Disk Array members conflict with another Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9025**

**Explanation:** Incompatible disk installed at degraded disk location in Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9026**

**Explanation:** Previously degraded disk in Disk Array not found at required physical location. Go to Performing the checkout procedure.

**Response:**

---

**2506-9027**

**Explanation:** Disk Array is or would become degraded and parity data is out of synchronization. Go to Performing the checkout procedure.

**Response:**

---

**2506-9028**

**Explanation:** Maximum number of functional Disk Arrays has been exceeded. Go to Performing the checkout procedure.

**Response:**

---

**2506-9029**

**Explanation:** Maximum number of functional Disk Arrays disks has been exceeded. Go to Performing the checkout procedure.

**Response:**

---

**2506-9030**

**Explanation:** Disk Array is degraded due to missing/failed disk. Go to Performing the checkout procedure.

**Response:**

---

**2506-9031**

**Explanation:** Automatic reconstruction initiated for Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9032**

**Explanation:** Disk Array is degraded due to missing/failed disk. Go to Performing the checkout procedure.

**Response:**

---

**2506-9041**

**Explanation:** Background Disk Array parity checking detected and corrected errors. Go to Performing the checkout procedure.

**Response:**

---

**2506-9042**

**Explanation:** Background Disk Array parity checking detected and corrected errors on specified disk. Go to Performing the checkout procedure.

**Response:**

---

**2506-9050**

**Explanation:** Required cache data can not be located for one or more disks. Go to Performing the checkout procedure.

**Response:**

---

---

**2506-9051**

**Explanation:** Cache data exists for one or more missing/failed disks. Go to Performing the checkout procedure.

**Response:**

---

**2506-9052**

**Explanation:** Cache data exists for one or more modified disks. Go to Performing the checkout procedure.

**Response:**

---

**2506-9054**

**Explanation:** RAID controller resources not available due to previous problems. Go to Performing the checkout procedure.

**Response:**

---

**2506-9060**

**Explanation:** One or more disk pairs are missing from a RAID-10 Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9061**

**Explanation:** One or more disks are missing from a RAID-0 Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9062**

**Explanation:** One or more disks are missing from a RAID-0 Disk Array. Go to Performing the checkout procedure.

**Response:**

---

**2506-9063**

**Explanation:** Maximum number of functional Disk Arrays has been exceeded. Go to Performing the checkout procedure.

**Response:**

---

**2506-9073**

**Explanation:** Multiple controllers connected in an invalid configuration. Go to Performing the checkout procedure.

**Response:**



---

**2506-9074**

**Explanation:** Multiple controllers not capable of similar functions or controlling same set of devices. Go to Performing the checkout procedure.

**Response:**

---

**2506-9075**

**Explanation:** Incomplete multipath connection between controller and remote controller. Go to Performing the checkout procedure.

**Response:**

---

**2506-9076**

**Explanation:** Missing remote controller. Go to Performing the checkout procedure.

**Response:**

---

**2506-9081**

**Explanation:** Controller detected device error during internal media recovery. Go to Performing the checkout procedure.

**Response:**

---

**2506-9082**

**Explanation:** Controller detected device error during internal media recovery. Go to Performing the checkout procedure.

**Response:**

---

**2506-9090**

**Explanation:** Disk has been modified after last known status. Go to Performing the checkout procedure.

**Response:**

---

**2506-9091**

**Explanation:** Incorrect disk configuration change has been detected. Go to Performing the checkout procedure.

**Response:**

---

**2506-9092**

**Explanation:** Disk requires Format before use. Format the disk and retry the operation.

**Response:**

---

**2506-FF3D**

**Explanation:** Temporary controller failure. Retry the operation.

**Response:**

**Failing Item:**

- FFC\_2506

---

**2506-FFF3**

**Explanation:** Disk media format bad. Reformat the disk and retry the operation.

**Response:**

---

**2506-FFF4**

**Explanation:** Device problem. Perform diagnostics on the device and retry the operation.

**Response:**

**Failing Item:**

- FFC\_722

---

**2506-FFF6**

**Explanation:** Device detected recoverable error. Retry the operation.

**Response:**

**Failing Item:**

- FFC\_722

---

**2506-FFFA**

**Explanation:** Temporary device bus error. Retry the operation.

**Response:**

**Failing Item:**

- FFC\_722

---

**2506-FFFE**

**Explanation:** Temporary device bus error. Retry the operation.

**Response:**

---

**2D14-102E**

**Explanation:** Reallocation failed due to disk out of alternate sectors. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-3002**

**Explanation:** Addressed device failed to respond to selection. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-3010**

**Explanation:** Disk returned wrong response to adapter. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-3020**

**Explanation:** Storage subsystem configuration error. Use MAP3150 to determine resolution.

**Response:**

---

**2D14-3100**

**Explanation:** Controller detected device bus interface error. Use MAP3150 to determine resolution.

**Response:**

---

**2D14-3109**

**Explanation:** Controller timed out a device command. Use MAP3150 to determine resolution.

**Response:**

---

**2D14-3110**

**Explanation:** Device bus interface error. Use MAP3150 to determine resolution.

**Response:**

---

---

### 2D14-4010

**Explanation:** Configuration error, incorrect connection between cascaded enclosures. Use MAP3142 to determine resolution.

**Response:**

---

### 2D14-4020

**Explanation:** Configuration error, connections exceed IOA design limits. Use MAP3143 to determine resolution.

**Response:**

---

### 2D14-4030

**Explanation:** Configuration error, incorrect multipath connection. Use MAP3144 to determine resolution.

**Response:**

---

### 2D14-4040

**Explanation:** Configuration error, incomplete multipath connection between controller and enclosure detected. Use MAP3144 to determine resolution.

**Response:**

---

### 2D14-4041

**Explanation:** Configuration error, incomplete multipath connection between enclosure and device detected. Use MAP3146 to determine resolution.

**Response:**

---

### 2D14-4050

**Explanation:** Attached enclosure does not support required multipath function. Use MAP3148 to determine resolution.

**Response:**

---

### 2D14-4060

**Explanation:** Multipath redundancy level got worse. Use MAP3153 to determine resolution.

**Response:**

---

### 2D14-4100

**Explanation:** Device bus fabric error. Use MAP3152 to determine resolution.

**Response:**

---

**2D14-4101**

**Explanation:** Temporary device bus fabric error. Use MAP3152 to determine resolution.

**Response:**

---

**2D14-4110**

**Explanation:** Unsupported enclosure function detected. Use MAP3145 to determine resolution.

**Response:**

---

**2D14-4150**

**Explanation:** PCI bus error detected by controller. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14
- 

**2D14-4160**

**Explanation:** PCI bus error detected by controller. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14
- 

**2D14-7001**

**Explanation:** Temporary disk data error. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-8150**

**Explanation:** Controller failure. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14

**2D14-8157**

**Explanation:** Temporary controller failure. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14
- 

**2D14-9000**

**Explanation:** Controller detected device error during configuration discovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9001**

**Explanation:** Controller detected device error during configuration discovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9002**

**Explanation:** Controller detected device error during configuration discovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9008**

**Explanation:** Controller does not support function expected for one or more disks. Use MAP3130 to determine resolution.

**Response:**

---

**2D14-9010**

**Explanation:** Cache data associated with attached disks cannot be found. Use MAP3120 to determine resolution.

**Response:**

---

**2D14-9011**

**Explanation:** Cache data belongs to disks other than those attached. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9020**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

---

**2D14-9021**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D14-9022**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D14-9023**

**Explanation:** One or more Disk Array members are not at required physical locations. Use MAP3112 to determine resolution.

**Response:**

---

**2D14-9024**

**Explanation:** Physical location of Disk Array members conflict with another Disk Array. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9025**

**Explanation:** Incompatible disk installed at degraded disk location in Disk Array. Use MAP3110 to determine resolution.

**Response:**

---

**2D14-9026**

**Explanation:** Previously degraded disk in Disk Array not found at required physical location. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9027**

**Explanation:** Disk Array is or would become degraded and parity data is out of synchronization. Use MAP3113 to determine resolution.

**Response:**

**2D14-9028**

**Explanation:** Maximum number of functional Disk Arrays has been exceeded. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9029**

**Explanation:** Maximum number of functional Disk Arrays disks has been exceeded. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9030**

**Explanation:** Disk Array is degraded due to missing/failed disk. Use MAP3110 to determine resolution.

**Response:**

---

**2D14-9031**

**Explanation:** Automatic reconstruction initiated for Disk Array. Use MAP3110 to determine resolution.

**Response:**

---

**2D14-9032**

**Explanation:** Disk Array is degraded due to missing/failed disk. Use MAP3110 to determine resolution.

**Response:**

---

**2D14-9041**

**Explanation:** Background Disk Array parity checking detected and corrected errors. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9042**

**Explanation:** Background Disk Array parity checking detected and corrected errors on specified disk. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9050**

**Explanation:** Required cache data can not be located for one or more disks. Use MAP3131 to determine resolution.

**Response:**

---



---

**2D14-9051**

**Explanation:** Cache data exists for one or more missing/failed disks. Use MAP3132 to determine resolution.

**Response:**

---

**2D14-9052**

**Explanation:** Cache data exists for one or more modified disks. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9054**

**Explanation:** RAID controller resources not available due to previous problems. Use MAP3121 to determine resolution.

**Response:**

---

**2D14-9060**

**Explanation:** One or more disk pairs are missing from a RAID-10 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D14-9061**

**Explanation:** One or more disks are missing from a RAID-0 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D14-9062**

**Explanation:** One or more disks are missing from a RAID-0 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D14-9063**

**Explanation:** Maximum number of functional Disk Arrays has been exceeded. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9073**

**Explanation:** Multiple controllers connected in an invalid configuration. Use MAP3140 to determine resolution.

**Response:**

**2D14-9074**

**Explanation:** Multiple controllers not capable of similar functions or controlling same set of devices. Use MAP3141 to determine resolution.

**Response:**

---

**2D14-9075**

**Explanation:** Incomplete multipath connection between controller and remote controller. Use MAP3149 to determine resolution.

**Response:**

---

**2D14-9076**

**Explanation:** Missing remote controller. Use MAP3147 to determine resolution.

**Response:**

---

**2D14-9081**

**Explanation:** Controller detected device error during internal media recovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9082**

**Explanation:** Controller detected device error during internal media recovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D14-9090**

**Explanation:** Disk has been modified after last known status. Use MAP3133 to determine resolution.

**Response:**

---

**2D14-9091**

**Explanation:** Incorrect disk configuration change has been detected. Use MAP3133 to determine resolution.

**Response:**

---

**2D14-9092**

**Explanation:** Disk requires Format before use. Format the disk and retry the operation. Use MAP3134 to determine resolution.

**Response:**

---

**2D14-FF3D**

**Explanation:** Temporary controller failure. Retry the operation. Replace the system board (SAS controller).

**Response:**

**Failing Item:**

- FFC\_2D14
- 

**2D14-FFF3**

**Explanation:** Disk media format bad. Reformat the disk and retry the operation. Use MAP3135 to determine resolution.

**Response:**

---

**2D14-FFF4**

**Explanation:** Device problem. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-FFF6**

**Explanation:** Device detected recoverable error. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-FFFA**

**Explanation:** Temporary device bus error. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D14-FFFE**

**Explanation:** Temporary device bus error. Use MAP3150 to determine resolution.

**Response:**

---

**2D29-102E**

**Explanation:** Reallocation failed due to disk out of alternate sectors. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722

---

**2D29-3002**

**Explanation:** Addressed device failed to respond to selection. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722

---

**2D29-3010**

**Explanation:** Disk returned wrong response to adapter. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722

---

**2D29-3020**

**Explanation:** Storage subsystem configuration error. Use MAP3150 to determine resolution.

**Response:**

---

**2D29-3100**

**Explanation:** Controller detected device bus interface error. Use MAP3150 to determine resolution.

**Response:**

---

**2D29-3109**

**Explanation:** Controller timed out a device command. Use MAP3150 to determine resolution.

**Response:**

---

**2D29-3110**

**Explanation:** Device bus interface error. Use MAP3150 to determine resolution.

**Response:**

---

**2D29-4010**

**Explanation:** Configuration error, incorrect connection between cascaded enclosures. Use MAP3142 to determine resolution.

**Response:**

---

**2D29-4020**

**Explanation:** Configuration error, connections exceed IOA design limits. Use MAP3143 to determine resolution.

**Response:**

---

**2D29-4030**

**Explanation:** Configuration error, incorrect multipath connection. Use MAP3144 to determine resolution.

**Response:**

---

**2D29-4040**

**Explanation:** Configuration error, incomplete multipath connection between controller and enclosure detected. Use MAP3144 to determine resolution.

**Response:**

---

**2D29-4041**

**Explanation:** Configuration error, incomplete multipath connection between enclosure and device detected. Use MAP3146 to determine resolution.

**Response:**

---

**2D29-4050**

**Explanation:** Attached enclosure does not support required multipath function. Use MAP3148 to determine resolution.

**Response:**

---

**2D29-4060**

**Explanation:** Multipath redundancy level got worse. Use MAP3153 to determine resolution.

**Response:**

---

**2D29-4100**

**Explanation:** Device bus fabric error. Use MAP3152 to determine resolution.

**Response:**

---

**2D29-4101**

**Explanation:** Temporary device bus fabric error. Use MAP3152 to determine resolution.

**Response:**

---

**2D29-4110**

**Explanation:** Unsupported enclosure function detected. Use MAP3145 to determine resolution.

**Response:**

---

**2D29-4150**

**Explanation:** PCI bus error detected by controller. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29
- 

**2D29-4160**

**Explanation:** PCI bus error detected by controller. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29
- 

**2D29-7001**

**Explanation:** Temporary disk data error. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_722
- 

**2D29-8150**

**Explanation:** Controller failure. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29

---

**2D29-8157**

**Explanation:** Temporary controller failure. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29
- 

**2D29-9000**

**Explanation:** Controller detected device error during configuration discovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9001**

**Explanation:** Controller detected device error during configuration discovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9002**

**Explanation:** Controller detected device error during configuration discovery. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9008**

**Explanation:** Controller does not support function expected for one or more disks. Use MAP3130 to determine resolution.

**Response:**

---

**2D29-9010**

**Explanation:** Cache data associated with attached disks cannot be found. Use MAP3120 to determine resolution.

**Response:**

---

**2D29-9011**

**Explanation:** Cache data belongs to disks other than those attached. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9020**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D29-9021**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D29-9022**

**Explanation:** Two or more disks are missing from a RAID-5 or RAID 6 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

**2D29-9023**

**Explanation:** One or more Disk Array members are not at required physical locations. Use MAP3112 to determine resolution.

**Response:**

---

**2D29-9024**

**Explanation:** Physical location of Disk Array members conflict with another Disk Array. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9025**

**Explanation:** Incompatible disk installed at degraded disk location in Disk Array. Use MAP3110 to determine resolution.

**Response:**

---

**2D29-9026**

**Explanation:** Previously degraded disk in Disk Array not found at required physical location. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9027**

**Explanation:** Disk Array is or would become degraded and parity data is out of synchronization. Use MAP3113 to determine resolution.

**Response:**



---

**2D29-9028**

**Explanation:** Maximum number of functional Disk Arrays has been exceeded. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9029**

**Explanation:** Maximum number of functional Disk Arrays disks has been exceeded. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9030**

**Explanation:** Disk Array is degraded due to missing/failed disk. Use MAP3110 to determine resolution.

**Response:**

---

**2D29-9031**

**Explanation:** Automatic reconstruction initiated for Disk Array. Use MAP3110 to determine resolution.

**Response:**

---

**2D29-9032**

**Explanation:** Disk Array is degraded due to missing/failed disk. Use MAP3110 to determine resolution.

**Response:**

---

**2D29-9041**

**Explanation:** Background Disk Array parity checking detected and corrected errors. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9042**

**Explanation:** Background Disk Array parity checking detected and corrected errors on specified disk. Use MAP3190 to determine resolution.

**Response:**

---

**2D29-9050**

**Explanation:** Required cache data can not be located for one or more disks. Use MAP3131 to determine resolution.

**Response:**

---

---

2D29-9051

**Explanation:** Cache data exists for one or more missing/failed disks. Use MAP3132 to determine resolution.

**Response:**

---

2D29-9052

**Explanation:** Cache data exists for one or more modified disks. Use MAP3190 to determine resolution.

**Response:**

---

2D29-9054

**Explanation:** RAID controller resources not available due to previous problems. Use MAP3121 to determine resolution.

**Response:**

---

2D29-9060

**Explanation:** One or more disk pairs are missing from a RAID-10 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

2D29-9061

**Explanation:** One or more disks are missing from a RAID-0 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

2D29-9062

**Explanation:** One or more disks are missing from a RAID-0 Disk Array. Use MAP3111 to determine resolution.

**Response:**

---

2D29-9063

**Explanation:** Maximum number of functional Disk Arrays has been exceeded. Use MAP3190 to determine resolution.

**Response:**

---

2D29-9073

**Explanation:** Multiple controllers connected in an invalid configuration. Use MAP3140 to determine resolution.

**Response:**

---

2D29-9074

**Explanation:** Multiple controllers not capable of similar functions or controlling same set of devices. Use MAP3141 to determine resolution.

**Response:**

---

## 2D29-9075

**Explanation:** Incomplete multipath connection between controller and remote controller. Use MAP3149 to determine resolution.

**Response:**

---

## 2D29-9076

**Explanation:** Missing remote controller. Use MAP3147 to determine resolution.

**Response:**

---

## 2D29-9081

**Explanation:** Controller detected device error during internal media recovery. Use MAP3190 to determine resolution.

**Response:**

---

## 2D29-9082

**Explanation:** Controller detected device error during internal media recovery. Use MAP3190 to determine resolution.

**Response:**

---

## 2D29-9090

**Explanation:** Disk has been modified after last known status. Use MAP3133 to determine resolution.

**Response:**

---

## 2D29-9091

**Explanation:** Incorrect disk configuration change has been detected. Use MAP3133 to determine resolution.

**Response:**

---

## 2D29-9092

**Explanation:** Disk requires Format before use. Format the disk and retry the operation. Use MAP3134 to determine resolution.

**Response:**

---

**2D29-FF3D**

**Explanation:** Temporary controller failure. Retry the operation. Replace the PCIe x8 Internal 3Gb SAS Adapter.

**Response:**

**Failing Item:**

- FFC\_2D29

---

**2D29-FFF3**

**Explanation:** Disk media format bad. Reformat the disk and retry the operation. Use MAP3135 to determine resolution.

**Response:**

---

**2D29-FFF4**

**Explanation:** Device problem. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722

---

**2D29-FFF6**

**Explanation:** Device detected recoverable error. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722

---

**2D29-FFFA**

**Explanation:** Temporary device bus error. Replace the FRU identified by diagnostics.

**Response:**

**Failing Item:**

- FFC\_722

---

**2D29-FFFE**

**Explanation:** Temporary device bus error. Use MAP3150 to determine resolution.

**Response:**

**A00-FF0 through A24-xxx SRNs:**

The AIX operating system might generate service request numbers (SRNs) from A00-FF0 to A24-xxx.

**Note:** Some SRNs in this sequence might have 4 rather than 3 digits after the dash (-).

Table 10 shows the meaning of an *x* in any of the following SRNs, such as A01-00*x*.

*Table 10. Meaning of the last character (x) after the hyphen*

Number	Meaning
1	Replace all FRUs listed
2	Hot swap supported
4	Software might be the cause
8	Reserved

The SRNs below describe each SRN and provide a recommended corrective action.

**A24-000**

**Explanation:** Spurious interrupts on shared interrupt level have exceeded threshold

**Response:**

1. Check the Management Module event log. If an error was recorded by the system, process that error.
2. If no system error is found, replace part numbers reported by the diagnostic program.
3. If no entry is found, Replace the system-board

**A24-XXX**

**Explanation:** Spurious interrupts have exceeded threshold.

**Response:**

1. Check the Management Module event log. If an error was recorded by the system, process that error.
2. If no system error is found, replace part numbers reported by the diagnostic program.
3. If no entry is found, Replace the system-board

**SCSD devices SRNs (ssss-102 to ssss-640):**

These service request numbers (SRNs) identify a self-configuring SCSI device (SCSD) problem.

Use the SRNs below when you suspect a SAS hard disk device problem. Replace the parts in the order that the failing function codes (FFCs) are listed.

**Notes:**

1. Some SRNs might have 4 digits rather than 3 digits after the dash (-).
2. The ssss before the dash (-) represents the 3 digit or 4 digit SCSD SRN.

**SSSS-102**

**Explanation:** An unrecoverable media error occurred.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-104**

**Explanation:** The motor failed to restart.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-105**

**Explanation:** The drive did not become ready.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-106**

**Explanation:** The electronics card test failed.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS

---

**SSSS-108**

**Explanation:** The bus test failed.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-110**

**Explanation:** The media format is corrupted.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-112**

**Explanation:** The diagnostic test failed.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-114**

**Explanation:** An unrecoverable hardware error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS

### SSSS-116

**Explanation:** A protocol error.

1. Make sure that the device, adapter and diagnostic firmware, and the application software levels are compatible.
2. If you do not find a problem, call your operating-system support person.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

### SSSS-117

**Explanation:** A write-protect error occurred.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

### SSSS-118

**Explanation:** A SCSD command time-out occurred.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
  - FFC\_252B
- 

### SSSS-120

**Explanation:** A SCSD busy or command error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS



---

**SSSS-122**

**Explanation:** A SCSD reservation conflict error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-124**

**Explanation:** A SCSD check condition error occurred.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-126**

**Explanation:** A software error was caused by a hardware failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
  - FFC\_252B
- 

**SSSS-128**

**Explanation:** The error log analysis indicates a hardware failure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_252B
- FFC\_SSSS
- SOFTWARE

**SSSS-129**

**Explanation:** Error log analysis indicates a SCSD bus problem.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_252B
  - FFC\_SSSS
  - SOFTWARE
- 

**SSSS-130**

**Explanation:** Error log analysis indicates a problem reported by the disk drive's self-monitoring function.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-132**

**Explanation:** A disk drive hardware error occurred.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-134**

**Explanation:** The adapter failed to configure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_252B
- SOFTWARE

**SSSS-135**

**Explanation:** The device failed to configure.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
  - FFC\_252B
  - SOFTWARE
- 

**SSSS-136**

**Explanation:** The certify operation failed.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-137**

**Explanation:** Unit attention condition has occurred on the Send Diagnostic command.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS
- FFC\_252B

---

**SSSS-138**

**Explanation:** Error log analysis indicates that the disk drive is operating at a higher than recommended temperature.

1. Make sure that:
  - The ventilation holes in the blade server bezel are not blocked.
  - The management-module event log is not reporting any system environmental warnings.
2. If the problem remains, call IBM support.

**Response:**

**Failing Item:**

- FFC\_SSSS
- 

**SSSS-140**

**Explanation:** Error log analysis indicates poor signal quality.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_199
  - FFC\_252B
  - FFC\_SSSS
- 

**SSSS-640**

**Explanation:** Error log analysis indicates a path error.

1. Check the BladeCenter management-module event log. If an error was recorded by the system, see POST progress codes (checkpoints).
2. Replace any parts reported by the diagnostic program.
3. Replace the system board and chassis assembly, as described in Replacing the system-board and chassis assembly.

**Response:**

**Failing Item:**

- FFC\_SSSS

## Failing function codes:

Failing function codes (FFCs) identify a function within the system unit that is failing.

Table 11 describes the component that each function code identifies.

**Note:** When replacing a component, perform system verification for the component. See “Using the diagnostics program” on page 417.

Table 11. Failing function codes

FFC	Description and notes
151	1. Battery <b>Note:</b> After replacing the battery: a. Set the time and date. b. Set the network IP addresses (for compute nodes that start up from a network). 2. System-board and chassis assembly
152	System-board and chassis assembly
166	Check the event log for an IBM Flex System Enterprise Chassis blower or fan fault. See the documentation that comes with the IBM Flex System Enterprise Chassis.
199	System-board and chassis assembly
210	System-board and chassis assembly
212	System-board and chassis assembly (cache problem)
214	System-board and chassis assembly
217	System-board and chassis assembly
219	Common memory logic problem for memory DIMMs. <b>Note:</b> If more than one pair of memory DIMMs are reported missing: 1. Replace the memory DIMM at the physical location code that is reported. 2. Replace the system board.
221	System-board and chassis assembly
226	System-board and chassis assembly
227	System-board and chassis assembly
241	Ethernet network problem
282	System-board and chassis assembly
292	System-board and chassis assembly (host to PCI bridge problem)
293	System-board and chassis assembly (PCI to PCI bridge problem)
294	System-board and chassis assembly (MPIC interrupt controller problem)
296	PCI device or adapter problem. <b>Note:</b> The replacement part can only be identified by the location code reported by diagnostics.
2C4	System-board and chassis assembly
2C7	System-board and chassis assembly (memory controller)
2C8	System-board and chassis assembly
2C9	System-board and chassis assembly
2D2	System-board and chassis assembly (bus arbiter problem)
2D3	System-board and chassis assembly
2D4	System-board and chassis assembly (System/SP interface logic problem)
2D5	System-board and chassis assembly (I2C primary)

Table 11. Failing function codes (continued)

FFC	Description and notes
2D6	System-board and chassis assembly (I2C secondary)
2D7	System-board and chassis assembly (VPD module)
2E8	System-board and chassis assembly (cache controller)
308	System-board and chassis assembly (I/O bridge problem)
650	Unknown hard disk drive. <b>Note:</b> This FFC indicates that the hard disk drive was not configured properly.
711	Unknown adapter
722	Unknown storage device
7C0	System-board and chassis assembly (microprocessor or system interface)
812	System-board and chassis assembly (common standard adapter logic problem)
815	System-board and chassis assembly (floating-point processor problem)
820	System-board and chassis assembly (interprocessor-related testing problem)
B88	System-board and chassis assembly (SAS controller)
D01	System-board and chassis assembly (cache problem)
E19	System-board and chassis assembly (power supply sensor failed)
25A0	System-board and chassis assembly
2627	IBM Flex System 2 port QDR InfiniBand adapter
2629	IBM Flex System 2 port QDR InfiniBand adapter (configuration problem)
2631	System-board and chassis assembly
268B	300 GB SAS small-form-factor disk drive
26B4	200 GB solid-state drive
26BD	Cover (SAS to SATA bridge problem)
26D2	600 GB SAS small-form-factor disk drive
26D7	900 GB SAS small-form-factor disk drive
2710	System-board and chassis assembly (integrated USB controller)
2750	IBM Flex System 2-port 16 Gb Fibre Channel adapter
2755	IBM Flex System 4-port 16 Gb Fibre Channel adapter
2770	IBM Flex System 2-port 10 Gb RoCE adapter
2D14	System-board and chassis assembly (integrated SAS adapter)
2E16	IBM Flex System 2-port 8 Gb fibre channel adapter
2E28	IBM Flex System 8-port 10 Gb converged adapter
2E37	IBM Flex System 4-port 10 Gb Ethernet adapter
2E3D	IBM Flex System 4-port 1 Gb Ethernet adapter
2E52	IBM Flex System 8-port 10 Gb converged adapter

### **Controller maintenance analysis procedures:**

These procedures are intended to resolve adapter, cache, or disk array problems associated with a controller.

See “Service request numbers (SRNs)” on page 264 to identify which MAP to use.

*MAP 3110:*

Perform MAP 3110 in the Systems Hardware information center.

*MAP 3111:*

Perform MAP 3111 in the Systems Hardware information center.

*MAP 3112:*

Perform MAP 3112 in the Systems Hardware information center.

*MAP 3113:*

Perform MAP 3113 in the Systems Hardware information center.

*MAP 3120:*

Perform MAP 3120 in the Systems Hardware information center.

*MAP 3121:*

Perform MAP 3121 in the Systems Hardware information center.

*MAP 3130:*

Perform MAP 3130 in the Systems Hardware information center.

*MAP 3131:*

Perform MAP 3131 in the Systems Hardware information center.

*MAP 3132:*

Perform MAP 3132 in the Systems Hardware information center.

*MAP 3133:*

Perform MAP 3133 in the Systems Hardware information center.

*MAP 3134:*

Perform MAP 3134 in the Systems Hardware information center.

*MAP 3135:*

Perform MAP 3135 in the Systems Hardware information center.

*MAP 3140:*

Perform MAP 3140 in the Systems Hardware information center.

*MAP 3141:*

Perform MAP 3141 in the Systems Hardware information center.

*MAP 3142:*

Perform MAP 3142 in the Systems Hardware information center.

*MAP 3143:*

Perform MAP 3143 in the Systems Hardware information center.

*MAP 3144:*

Perform MAP 3144 in the Systems Hardware information center.

*MAP 3145:*

Perform MAP 3145 in the Systems Hardware information center.

*MAP 3146:*



Perform MAP 3146 in the Systems Hardware information center.

MAP 3147:

Perform MAP 3147 in the Systems Hardware information center.

MAP 3148:

Perform MAP 3148 in the Systems Hardware information center.

MAP 3149:

Perform MAP 3149 in the Systems Hardware information center.

MAP 3150:

Perform MAP 3150 in the Systems Hardware information center.

MAP 3152:

Perform MAP 3152 in the Systems Hardware information center.

MAP 3153:

Perform MAP 3153 in the Systems Hardware information center.

MAP 3190:

Perform MAP 3190 in the Systems Hardware information center.

## Error logs

The power-on self-test (POST), the hypervisor, and the service processor write errors to the event log of the IBM Chassis Management Module.

The following table shows the syntax of a nine-word B700xxxx system reference code (SRC) as it might be displayed in the event log of the IBM Chassis Management Module (CMM). Additional information for the event can be viewed by clicking **more...** in the message field.

The first word of the SRC in this example is the message identifier B7001111. This example numbers each word after the first word to show relative word positions. The seventh word is the direct select address, which is 77777777 in the example.

Table 12. Nine-word SRC in the CMM event log

Severity	Source	Date	Message	Additional information for event
Critical	Blade_05	Jan 21, 2012 07:15 AM	Node SN#xxxxxxxxxxxx message: (System event) system hardware failure. more...	Firmware. Replace UNKNOWN (5008FECF <b>B7001111</b> 22222222 33333333 44444444 55555555 66666666 77777777 88888888 99999999)

Depending on your operating system and the utilities installed, error messages might also be stored in an operating system log. For more information, see the documentation that comes with the operating system.

## Checkout procedure

The checkout procedure is the sequence of tasks that you follow to diagnose a problem in the compute node.

### About the checkout procedure

Review this information before performing the checkout procedure.

- Read the Safety topic and the “Installation guidelines” on page 27.
- The firmware diagnostic program provides the primary methods of testing the major components of the compute node. If you are not sure whether a problem is caused by the hardware or by the software, you can use the firmware diagnostic program to confirm that the hardware is working correctly. The firmware diagnostic program runs automatically when the compute node is turned on.
- A single problem might cause more than one error message. When this happens, correct the cause of the first error message. The other error messages usually will not occur the next time you run the diagnostic programs.
- If the compute node hangs on a POST checkpoint, see “POST progress codes (checkpoints)” on page 196. If the compute node is halted and no error message is displayed, see “Troubleshooting by symptom” on page 419 and “Solving undetermined problems” on page 457.
- For intermittent problems, check the management-module event log and “POST progress codes (checkpoints)” on page 196.
- If the compute node front panel shows no LEDs, verify the compute node status and errors in the IBM Flex System Enterprise Chassis Web interface. Also, see “Solving undetermined problems” on page 457.
- If device errors occur, see “Troubleshooting by symptom” on page 419.

### Performing the check-out procedure

Follow this procedure to perform the check-out.

#### About this task

1. Establish a Serial over LAN (SOL) session. For information about starting an SOL session, see the *IBM Chassis Management Module Command-Line Interface Reference Guide*. Continue to Step 2.

**Note:** If the compute node does not start, see “Troubleshooting by symptom” on page 419.

2. Verify that you have looked up each error code or hung checkpoint and attempted the corrective action before going to the next step:
  - a. If the firmware hangs on an 8 digit progress code, see “POST progress codes (checkpoints)” on page 196.
  - b. If the firmware records an 8 digit error code, see “System reference codes (SRCs)” on page 90.
  - c. Check the event log. If an error was recorded by the system, see “POST progress codes (checkpoints)” on page 196 or “System reference codes (SRCs)” on page 90.
  - d. If no error was recorded, or if the login prompt appears and you still suspect a problem, continue with the next step.
3. Is the compute node running the Linux operating system?  
**Yes**      Record any information or messages that are in the event log, and go to Step 7. If you cannot load the stand-alone diagnostics image, answer this question as No.  
**No**        Go to “Solving undetermined problems” on page 457.
4. Perform the following steps:
  - a. Ensure that the device from which you load the stand-alone diagnostics is set as the first device in the compute node boot sequence.
  - b. Turn off the compute node and wait 45 seconds before proceeding.
  - c. Turn on the compute node and establish an SOL session.
  - d. Check for the following responses:

- 1) Progress codes are recorded in the event log.
  - 2) Record any messages or diagnostic information that might be in the log.
- Continue with step 8.
5. Load the stand-alone diagnostics. Go to “Starting stand-alone diagnostics” or “Starting stand-alone diagnostics from a NIM server” on page 416.
- Can you load the stand-alone diagnostics?
- No** Go to “Solving undetermined problems” on page 457.
- Yes** Select the resources to be tested and record any SRNs. Then go to “Service request numbers (SRNs)” on page 264.
- This ends the Linux procedure.

For more information about installing and using all supported operating systems, search the IBM Support website.

## Verifying the partition configuration

Perform this procedure if there is a configuration problem with the system or a logical partition.

### Procedure

1. Check the processor and memory allocations of the system or the partition. Processor or memory resources that fail during system startup could cause the startup problem in the partition. Make sure that the processor and memory have enough functioning resources in the system for all the partitions.
2. Check the bus and virtual adapter allocations for the partition. Make sure that the partition has load source and console I/O resources.
3. Make sure that the boot mode partition properties are set to normal.
4. If the problem remains, contact your software service provider for further assistance.

## Running the diagnostics program

You can start or run the diagnostics program from a CD or from a management server.

### Starting stand-alone diagnostics

Perform these procedures to start the stand-alone diagnostics from a CD or flash drive. These procedures can be used if the compute node is running a Linux operating system.

### About this task

You can download the latest version of the stand-alone diagnostics from the Standalone Diagnostics CD page.

### Procedure

1. Verify with the system administrator and system users that the compute node might be shut down. Stop all programs, and then shut down the operating system and shut down the compute node. See the documentation that comes with your operating system documentation for information about shutting down the operating system.

2. Using the management module Web interface, verify the following items:
  - The compute node firmware is at the latest version.
  - SOL is enabled for the compute node.
  - The CD or DVD drive or USB flash drive is selected as the first boot device for the compute node.
3. Insert diagnostic media.
  - If you are using a stand-alone diagnostics CD, plugin the external optical drive (CD- and DVD-compatible) with a USB connection and insert the stand-alone diagnostics CD into the CD or DVD drive.
  - If you are using a USB flash drive, insert the USB flash drive that has stand-alone diagnostic image copied in it.
4. Turn on the compute node and establish a Serial over LAN (SOL). For information about starting an SOL session, see the *IBM Chassis Management Module Command-Line Interface Reference Guide*.

**Note:** It can take several minutes to load the stand-alone diagnostics from the CD or flash drive. The window displays Please define the System Console.

5. Type 1 and press Enter to continue.  
The Diagnostic Operating Instructions window is shown.
6. Press Enter to continue.  
The Function Selection window is shown. See “Using the diagnostics program” on page 417 for more information about running the diagnostics program.

**Note:** If the Define Terminal window is shown, type the terminal type and press Enter. The use of vs100 as the terminal type is preferred. However, the function keys might not work. In this case, press Esc and the number on the menus. For example, instead of F3, you can press Esc+3.

7. When testing is complete, press F3 until the Diagnostic Operating Instructions window is shown, and then press F3 again to exit the diagnostic program.
8. Remove diagnostic media.
  - If you are using a stand-alone diagnostics CD, remove the CD from the CD or DVD drive.
  - If you are using a USB flash drive, remove the USB flash drive.

## Starting stand-alone diagnostics from a NIM server

Perform this procedure to start the stand-alone diagnostics from a Network Installation Management (NIM) server.

### About this task

#### Procedure

1. Verify with the system administrator and system users that the compute node can be shut down. Stop all programs, and then shut down the operating system and shut down the compute node. See the documentation that comes with your operating system for information about shutting down the operating system.

2. If the system is running in a full-machine partition, turn on the compute node and establish a Serial over LAN (SOL) session. For information about starting an SOL session, see the *IBM Chassis Management Module Command-Line Interface Reference Guide*.
3. Perform the following steps to check the NIM server boot settings:
  - a. When the POST menu is displayed, press 1 to start the SMS utility.
  - b. From the SMS main menu, select **Setup Remote IPL (Initial Program Load)**.
  - c. From the NIC Adapters menu, select the network adapter that is attached to the NIM server.
  - d. From the Network Parameters menu, select **IP Parameters**.
  - e. Enter the client, server, and gateway IP addresses (if applicable), and enter the subnet mask. If there is no gateway between the NIM server and the client, set the gateway address to 0.0.0.0. See your network administrator to determine if there is a gateway.
  - f. If the NIM server is set up to allow pinging the client system, use the Ping Test option on the Network Parameters menu to verify that the client system can ping the NIM server.

**Note:** If the ping fails, see “Boot problem resolution” on page 418, and then follow the steps for network boot problems.

4. When the ping is successful, start the compute node from the NIM server.
5. Establish an SOL session.

If the Diagnostic Operating Instructions window is shown, the diagnostics program started successfully.

**Note:** If the login prompt is displayed, the diagnostics program did not load. See “Boot problem resolution” on page 418, and then follow the steps for network boot problems.

6. Press Enter to continue.

The Function Selection window is shown. See “Using the diagnostics program” for more information about running the diagnostics program.

**Note:** If the Define Terminal window is shown, type the terminal type and press Enter. The use of vs100 as the terminal type is preferred. However, the function keys might not work. In this case, press Esc and the number in the screen menus. For example, instead of F3, you can press Esc+3.

7. When testing is complete, press F3 until the Diagnostic Operating Instructions window is shown, and then press F3 again to exit the diagnostic program.

## Using the diagnostics program

Follow the basic procedures for running the diagnostics program.

### Procedure

1. Start the diagnostics from the a CD or from a management server. See “Starting stand-alone diagnostics” on page 415 or “Starting stand-alone diagnostics from a NIM server” on page 416.
2. From the Function Selection menu, perform one of the following tasks using the steps listed:
  - **Problem determination**
    - a. Select **Diagnostic Routines** and press Enter.
    - b. From the Diagnostic Mode Selection menu, select **Problem Determination**.
    - c. Select the resource to be tested, and press F7=Commit.
    - d. Record any results provided and go to “Service request numbers (SRNs)” on page 264 to identify the failure and perform the actions.
    - e. When testing is complete, press F3 to return to the Diagnostic Selection menu. If you want to run another test, press F3 again to return to the Function Selection menu.
  - **System verification**
    - a. Select **Diagnostic Routines** and press Enter.

- b. From the Diagnostic Mode Selection menu, select **System Verification**.
  - c. Select the resource to be tested, and press F7=Commit.
  - d. Record any results provided and go to "Service request numbers (SRNs)" on page 264 to identify the failure and perform the action(s).
  - e. When testing is complete, press F3 to return to the Diagnostic Selection menu. If you want to run another test, press F3 again to return to the Function Selection menu.
- **Task selection**
    - a. Select **Task Selection** and press Enter.
    - b. Select the task to be run and press Enter.
    - c. If the Resource Selection List menu is displayed, select the resource on which the task is to be run and press F7=Commit.
    - d. Follow the instruction for the selected task.
    - e. When the task is complete, press F3 to return to the Task Selection List menu. If you want to run another test, press F3 again to return to the Function Selection menu.
3. When testing is complete, press F3 until the Diagnostic Operating Instructions window is displayed. Then press F3 again to exit the diagnostic program.

## Boot problem resolution

Depending on the boot device, a checkpoint might be displayed in the list of checkpoints in the management console for an extended period of time while the boot image is retrieved from the device.

### About this task

This situation is particularly true for boot image and network boot attempts.

**Note:** For network boot attempts, if the system is not connected to an active network, or if there is no compute node configured to respond to the system's boot request, the system will still attempt to boot. Because time-out durations are necessarily long to accommodate retry operations, the system might appear to be hung.

If you suspect a problem loading the boot image, complete the following steps:

### Procedure

1. Make sure that your boot list is correct.
  - a. Use the management console to display the boot sequences for the compute nodes in your IBM Flex System Enterprise Chassis.
  - b. Find your compute node on the list that is displayed and make sure that the device from which you are attempting to boot is the first device in the boot sequence. If it is not, select your compute node from the list of compute nodes and change the boot sequence. Power off and then power on your compute node to retry the boot.

**Note:** If **Network** is selected, the compute node tries to boot from both Ethernet ports on the system board.

- c. If this boot attempt fails, complete the following steps:
  - 1) If you are attempting to boot from the network, go to Step 2.
  - 2) If you are attempting to boot from a hard disk drive, go to Step 3.

2. If you are attempting to boot from the network:
  - a. Make sure that the network cabling to the IBM Flex System Enterprise Chassis network switch is correct.
  - b. Check with the network administrator to make sure that the network is up.
  - c. Verify that the compute node for your system is running and configured to respond to your system.
  - d. Turn the compute node power off, and then turn it on to retry the boot operation.
  - e. If the boot still fails, replace the system-board and chassis assembly.
3. If you are attempting to boot from a hard disk drive:
  - a. Verify that the hard disk drive is installed.
  - b. Select the hard disk drive as the boot device.
  - c. Reload the operating system onto the hard disk drive if the boot attempts from that disk continue to fail.
  - d. If you are not able to load the operating system, replace the suspected hard disk drive.
  - e. Replace the system board, and then retry loading the operating system.

## Troubleshooting by symptom

Use the troubleshooting tables to find solutions to problems that have identifiable symptoms.

### About this task

If these symptoms relate to shared IBM Flex System Enterprise Chassis resources, see “Solving shared IBM Flex System Enterprise Chassis resource problems” on page 455. If you cannot find the problem in these tables, see “Running the diagnostics program” on page 415 for information about testing the compute node.

If you have just added new software or a new optional device and the compute node is not working, complete the following steps before using the troubleshooting tables:

1. Remove the software or device that you just added.
2. Run the diagnostic tests to determine whether the compute node is running correctly.
3. Reinstall the new software or new device.

### Intermittent problems

Identify intermittent problem symptoms and corrective actions.

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by “Trained service technician only,” that step must be performed only by a trained service technician.</li> </ul>	
Symptom	Action
Intermittent connectivity problems (single compute node)	<ol style="list-style-type: none"> <li>Make sure that the network cables are correctly connected in the switch module ports and that the switch module is correctly seated.</li> <li>Update the network interface card (NIC) device driver or the storage device controller device driver.</li> <li>See the documentation for the I/O module for resolving connectivity problems.</li> </ol>

<ul style="list-style-type: none"> <li>• Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>• See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>• If an action step is preceded by “Trained service technician only,” that step must be performed only by a trained service technician.</li> </ul>	
Symptom	Action
Intermittent connectivity problems (two or more compute nodes)	<ol style="list-style-type: none"> <li>1. Using the diagnostic tools that are provided by the device manufacturer, test the I/O module that the devices are connected to.</li> <li>2. Attempt to connect one compute node to the network first, and connect other compute nodes, one by one, to try to isolate the problem.</li> <li>3. Update the I/O module firmware, if necessary.</li> </ol> <p><b>Note:</b> Restarting the compute node and running POST diagnostics on the I/O module might also help isolate the problem; however, this might have other ramifications to the network.</p>
Intermittent external device problems	<ol style="list-style-type: none"> <li>1. Make sure that the correct device drivers are installed. See the manufacturer's website for documentation.</li> <li>2. For a USB device: <ol style="list-style-type: none"> <li>a. Make sure that the device is configured correctly (see “Using the SMS utility” on page 18).</li> <li>b. Connect the device to another port. If using a USB hub, remove the hub and connect the device directly to the compute node. Make sure that the device is configured correctly for the port (see “Using the SMS utility” on page 18).</li> </ol> </li> </ol>
Intermittent Kernel-based Virtual Machine (KVM) problems	<p>Video problems:</p> <ol style="list-style-type: none"> <li>1. Make sure that all cables and the console breakout cable are properly connected and secure.</li> <li>2. Make sure that the monitor is working properly by testing it on another compute node.</li> <li>3. Test the console breakout cable on a working compute node to ensure that it is operating properly. Replace the console breakout cable if it is defective.</li> </ol> <p>Keyboard problems:</p> <p>Make sure that all cables and the console breakout cable are properly connected and secure.</p> <p>Mouse problems:</p> <p>Make sure that all cables and the console breakout cable are properly connected and secure.</p>
Intermittent unexpected reboot problems	<p>Check for an event code that indicates a compute node restarting. Some correctable errors require that the compute node reboot so that it can disable a device, such as a memory DIMM or a microprocessor to allow the machine to boot properly. See the action plan for the error to resolve the problem.</p>



## Connectivity problems

Identify connectivity problem symptoms and the corrective actions to take.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by “Trained service technician only,” that step must be performed only by a trained service technician.

Symptom	Action
One or more compute nodes are unable to communicate with the SAN	<ol style="list-style-type: none"><li>1. Complete the following items:<ol style="list-style-type: none"><li>a. The I/O module is powered on and the appropriate ports are enabled on the I/O module.</li><li>b. The IBM Chassis Management Module (CMM) has reported that the I/O module has completed POST and that no errors have been reported in the logs.</li><li>c. The SAN device is powered on and is functional.</li><li>d. All cables between the I/O module and the SAN device are properly connected and secure, and that the activity LEDs are lit on the appropriate ports.</li></ol></li><li>2. See the documentation for the I/O module for additional information about troubleshooting SAN connectivity or network connectivity problems.</li></ol>

<ul style="list-style-type: none"> <li>• Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>• See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>• If an action step is preceded by “Trained service technician only,” that step must be performed only by a trained service technician.</li> </ul>	
Symptom	Action
One compute node is unable to connect to the data network	<ol style="list-style-type: none"> <li>1. Complete the following items:               <ol style="list-style-type: none"> <li>a. The I/O module is powered on and the appropriate ports are enabled on the I/O module.</li> <li>b. All cables between the I/O module and the network device (switch or router) are properly connected and secure, and that the activity LEDs are lit on the appropriate ports.</li> </ol> </li> <li>2. From the compute node operating system, make sure that the network device is active. See the documentation for the operating system for information about viewing network devices.</li> <li>3. From the compute node operating system, verify the network settings, such as IP address, subnet mask (if applicable), Dynamic Host Configuration Protocol (DHCP) settings, and virtual local area network (VLAN) settings, to ensure that the settings match the settings of the network device. See the documentation for the operating system for information about checking network settings.</li> <li>4. Ensure that the latest device drivers of the IO cards are installed.</li> <li>5. Check the IBM Support website for any firmware updates that might apply to this problem. You can view the release notes for a firmware update to determine the problems that are addressed by the update.</li> <li>6. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29. Check the connectors at the back of the node for bent pins. If the pins are bent, contact IBM Support. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.</li> <li>7. Install the compute node in another compute node bay to determine whether the problem remains. See “Installing the compute node in an IBM Flex System Enterprise Chassis” on page 76. If the problem remains, make sure that the compute node is connected to a port that has been enabled and that the VLAN settings enable that port to connect to the network.</li> <li>8. Check the IBM support website for any service bulletins that are related to network connectivity.</li> <li>9. Trained service technician only:               <ol style="list-style-type: none"> <li>a. Force the link/duplex speed.</li> <li>b. Check the connectors on the I/O module to ensure that no pins are bent.</li> <li>c. Check the connectors on the chassis midplane to ensure that no pins are bent. See <a href="http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.common.nav.doc/chassis.html">http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.common.nav.doc/chassis.html</a>.</li> <li>d. Remove the I/O module and install a working I/O module in the same I/O bay.</li> <li>e. If the problem is solved, replace the I/O module that you removed.</li> <li>f. If the problem remains, replace the midplane.</li> </ol> </li> </ol>

<ul style="list-style-type: none"> <li>• Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>• See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>• If an action step is preceded by “Trained service technician only,” that step must be performed only by a trained service technician.</li> </ul>	
Symptom	Action
One compute node experiences a sudden loss of connectivity	The event is logged in the event log. See the IBM Flex System Manager (FSM) Active Status log (if an FSM is installed), the Hardware Management Console (HMC) Event log (if an HMC is installed), the Integrated Virtualization Manager (IVM) event log (if an IVM is installed), or the CMM event log to determine what actions might be required to resolve this problem.
Two or more compute nodes are unable to communicate during initial setup	<ol style="list-style-type: none"> <li>1. If you have just updated the firmware for one or more devices in the chassis (such as an I/O module or CMM), install the previous level of firmware.</li> <li>2. Complete the following items: <ol style="list-style-type: none"> <li>a. The I/O module is powered on and the applicable ports are enabled in the I/O module.</li> <li>b. All cables between the I/O module and the network device (switch or router) are correctly connected and secure and that the activity LEDs are lit on the applicable ports.</li> </ol> </li> <li>3. From the compute node operating system, make sure that the network device is active. See the documentation for the operating system for information about viewing network devices.</li> <li>4. From the compute node operating system, verify the network settings, such as IP address, subnet mask (if you are using IPv4), DNS, DHCP settings, and VLAN settings, to ensure that the settings match the settings of the network device. See the documentation for the operating system for information about checking network settings.</li> <li>5. Check the IBM Support website for any firmware updates that might apply to this problem. You can view the release notes for a firmware update to determine the problems that are addressed by the update.</li> <li>6. Check the IBM Support website for any service bulletins that are related to network connectivity.</li> <li>7. Trained service technician only: <ol style="list-style-type: none"> <li>a. Force the link/duplex speed.</li> <li>b. Check the connectors on the I/O module to ensure that no pins are bent.</li> <li>c. Check the connectors on the chassis midplane to ensure that no pins are bent. See <a href="http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.common.nav.doc/chassis.html">http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.common.nav.doc/chassis.html</a>.</li> <li>d. Remove the I/O module and install a working I/O module in the same I/O bay.</li> <li>e. If the problem is solved, replace the I/O module that you removed.</li> <li>f. If the problem remains, replace the midplane.</li> </ol> </li> </ol>
Two or more compute nodes experience a sudden loss of connectivity	The event is logged in the event log. See the FSM Active Status log (if an FSM is installed), the HMC Event log (if an HMC is installed), the event log (if an IVM is installed), or the CMM event log to determine what actions might be required to resolve this problem.

## PCI expansion card (PIOCARD) problem isolation procedure

The hardware that controls PCI adapters and PCI card slots detected an error. The direct select address (DSA) portion of the system reference code (SRC) identifies the location code of the failing component.

The following table shows the syntax of a nine-word B700xxxx system reference code (SRC) as it might be displayed in the event log of the IBM Chassis Management Module (CMM). Additional information for the event can be viewed by clicking **more...** in the message field.

The first word of the SRC in this example is the message identifier B7001111. This example numbers each word after the first word to show relative word positions. The seventh word is the direct select address, which is 77777777 in the example.

Table 13. Nine-word SRC in the CMM event log

Severity	Source	Date	Message	Additional information for event
Critical	Blade_05	Jan 21, 2012 07:15 AM	Node SN#xxxxxxxxxxxx message: (System event) system hardware failure. more...	Firmware. Replace UNKNOWN (5008FECF <b>B7001111</b> 22222222 33333333 44444444 55555555 66666666 <b>77777777</b> 88888888 99999999)

Depending on your operating system and the utilities installed, error messages might also be stored in an operating system log. For more information, see the documentation that comes with the operating system.

The Table 14 shows the procedure for isolating which PCI expansion card is failing.

Table 14. PCI expansion card problem isolation procedure

<ul style="list-style-type: none"><li>• Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li><li>• See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li><li>• If an action step is preceded by “Trained service technician only,” that step must be performed only by a trained service technician.</li></ul>	
Symptom	Action
A B700xxxx error message indicates a problem with a PCI expansion card.	<ol style="list-style-type: none"><li>1. Collect the error log information.</li><li>2. Get the DSA, which is word 7 of the associated B700xxxx SRC.</li><li>3. Use the hexadecimal value of the DSA to determine the location code of the failing CRU. For the IBM Flex System p24L Compute Node:<ul style="list-style-type: none"><li>• If the value is 02000000 or 02100000, the location code is P1-C18.</li><li>• If the value is 02020000 or 02110000, the location code is P1-C19.</li></ul></li><li>4. Replace the device that you just installed.</li></ol>

## Hypervisor problems

The hypervisor provides error diagnostics with associated error codes, isolation procedures, and symbolic failing items for troubleshooting.

Table 15 describes the isolation procedures and the symbolic failing items.

Table 15. Hypervisor isolation procedures and symbolic failing items

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
ANYPROC	The failing component is one of the system processors.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
CAPACTY	The failing component is the management card.	<ol style="list-style-type: none"> <li>Replace the management card, as described in “Removing the management card” on page 57 and “Installing the management card” on page 59.</li> <li>After replacing the card and installing the compute node in the chassis unit and before rebooting the compute node or performing other operations, ensure that the initialization of the VPD on the management card occurs by waiting for the management module to discover the compute node. Otherwise, the system might fail to perform an initial program load (IPL).</li> </ol>
CLKMOD	The logic oscillator is failing.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
FRPORT	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
HEA	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
HSL_LNK	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
LICCODE	A firmware problem occurred.	See Isolating firmware problems.
LPARCFG	There is a configuration problem with the system or with a logical partition.	<ol style="list-style-type: none"> <li>Perform all actions associated with the other failing items logged with this System reference code (SRC). If that does not resolve the problem, continue with the next step.</li> <li>Check processor and memory allocations of the system or the partitions. Verify that the processor and memory have enough functioning resources in the system for all of the partitions. Processor or memory have enough functioning resources that failed or were removed during system power on could cause the problem in the partition.</li> <li>Check the bus and I/O adapter allocations for the partition. Verify that the partition has load source and console I/O resources.</li> <li>Check the IPL mode of the system or failing partition.</li> <li>For further assistance, contact IBM Support.</li> </ol>

Table 15. Hypervisor isolation procedures and symbolic failing items (continued)

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
<b>LSERROR</b>	An error occurred when the platform Licensed Internal Code attempted to locate the partition's load source.	Choose from the following options: <ul style="list-style-type: none"> <li>If the load source is a disk drive or solid-state drive, perform a D-mode IPL. Correct any errors found.</li> <li>If the load source is not a disk drive or solid-state drive, replace the media. If replacing the media does not work, look for other errors.</li> </ul>
<b>MA_BRDG</b>	The multi-adapter bridge hardware is failing.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>MABIP50</b>	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
<b>MABIP51</b>	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
<b>MASBUS</b>	The multi-adapter bridge detected a problem with a connection to a PCI adapter that it controls.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>MEMDIMM</b>	The failing component is one of the memory DIMMs.	<ol style="list-style-type: none"> <li>Replace the failing DIMM. See “Removing a DIMM” on page 44 for location information and for the removal procedure.</li> <li>Install new memory DIMMs, as described in “Installing a DIMM” on page 46.</li> </ol> For more information, see “Supported DIMMs” on page 48.
<b>NEXTLVL</b>	Contact IBM Support.	
<b>OPT_CLN</b>	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
<b>PCIE_SW</b>	The PCIe switch might be the failing item.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>PCIEBUS</b>	The PCIe bus might be the failing item.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>PIOCARD</b>	The hardware that controls PCI adapters and PCI card slots detected an error. The direct select address (DSA) portion of the system reference code (SRC) identifies the location code of the failing component.	Use the “PCI expansion card (PIOCARD) problem isolation procedure” on page 424 to determine the failing component.
<b>PRI_PCI</b>	This item does not apply to compute nodes. Continue with the next item in the failing item list.	

Table 15. Hypervisor isolation procedures and symbolic failing items (continued)

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
PSI_LNK	The path to the service processor might be the failing item.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
SICNTRL	This item does not apply to compute nodes. Continue with the next item in the failing item list.	
SIIOADP	The I/O hub or I/O bridge might be failing.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
SLOTUSE	The card in the given slot is not available for use.	<ol style="list-style-type: none"> <li>Is the SRC B2002250 or B2002300?  <b>No:</b> Continue with step 3.  <b>Yes:</b> The first two characters in word 4 of the reference code will identify the platform Licensed Internal Code component that has control of the slot. Continue with the next step.</li> <li>What is the value of the first two characters of word 4 of the reference code?  <ul style="list-style-type: none"> <li><b>02 or 03:</b> The management console has control of the slot. Make sure that management console is not using the slot. <b>This ends the procedure.</b></li> <li><b>Other:</b> Contact your next level of support. <b>This ends the procedure.</b></li> </ul> </li> <li>Is the SRC B2002475?  <b>No:</b> Contact your next level of support. <b>This ends the procedure.</b>  <b>Yes:</b> Continue with the next step.</li> <li>Look in the event log for part numbers and location codes associated with the card slot.  <b>Note:</b> There will not be a part number if the card slot is empty.  Check the server to see if a card is physically present in the card slot. Is a card physically present?  <b>No:</b> Use symbolic FRU LPARCFG to reconfigure the card slot so that it is not a required resource to perform a partition IPL. <b>This ends the procedure.</b>  <b>Yes:</b> Replace the failing card. <b>This ends the procedure.</b></li> </ol>
SVCDOCS	Read the description of the system reference code (SRC) and perform any actions indicated there. If you have already read and performed the actions in the description, go to the next failing item in the failing item list.	
SVCPROC	The service processor is failing.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.

Table 15. Hypervisor isolation procedures and symbolic failing items (continued)

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
TOPORT	This item does not apply to compute nodes. Continue with the next item in the failing item list.	

## Service processor problems

The service processor provides error diagnostics with associated error codes, isolation procedures, and symbolic failing items for troubleshooting.

**Note:** Resetting the service processor causes a POWER7 reset and reload, which generates a dump. The dump is recorded in the management module event log. The reset and reload dump occurs whenever the service processor resets, such as when resetting the service processor through the management module Web interface or through the management module command-line interface (CLI).

The service processor reports isolation procedures and symbolic failing items to identify specific service actions. The isolation procedures and symbolic failing items are recorded in the management-module event log.

A message with three procedures might be similar to the following example, except that the entry would be on one line in the event log:

```
(SN#YL31W7120029) SYS F/W: CEC Hardware VPD.  
See procedure FSPSP07, FSPSP28 then FSP0200  
(5000004C B15A3303 22222222 33333333 44444444 55555555  
66666666 77777777 88888888 99999999)
```

B15A3303 is the identifier word of the associated system reference code (SRC). The rest of the nine words in the SRC are shown in sequence.

A message that identifies symbolic failing items might be similar to the following example:

```
(SN#YL31W7120029) SYS F/W: Error. Replace PIOCARD then Sys Brd  
(500213A0 B7006973 22222222 33333333 44444444 55555555  
66666666 77777777 88888888 99999999)
```

A message with multiple isolation procedures or symbolic failing items might be too long to display. In such a case, the message removes SRC words starting with word 2 and inserts an X for every removed word. The following example shows an error log entry that did not have enough room for words 2 and 3:

```
(SN#YL31W7120029) SYS F/W: CEC Hardware VPD.  
See procedure FSPSP07, FSPSP28 then FSP0200  
(50000014 B15A3303 XX 44444444 55555555 66666666  
77777777 88888888 99999999)
```



<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
ANYPROC	The failing component is one of the system processors.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
CAPACTY	The failing component is the management card.	<ol style="list-style-type: none"> <li>1. Replace the management card, as described in “Removing the management card” on page 57 and “Installing the management card” on page 59.</li> <li>2. After replacing the card and installing the compute node in the chassis unit and before rebooting the compute node or performing other operations, ensure that the initialization of the VPD on the management card occurs by waiting for the management module to discover the compute node. Otherwise, the system might fail to perform an initial program load (IPL).</li> </ol>
CHSPWR	The compute node lost ac power.	<p>This procedure helps you determine the source of the power loss condition that brought you here. If the system or expansion unit that exhibited the power loss starts normally, or stays powered on after an ac power failure, replacement of parts might not be needed. This is likely caused by one of three scenarios:</p> <ol style="list-style-type: none"> <li>1. If the compute node was disconnected with the power still on, this SRC is generated. If the check log indicator remains on, it can be turned off through the management console (if available).</li> <li>2. Power loss to the chassis. This can be caused by a brown-out or the failure of PDUs. The SRC is generated by the compute node, but the problem is not local to the compute node. No compute node hardware requires replacement.</li> <li>3. Power lost to the compute node slot only, but power remains on in the other compute nodes in the chassis. In this case a legitimate hardware fail is possible. Other power-related (1100xxxx) SRC's for the compute node are expected to further diagnose and isolate the problem.</li> </ol>
CLKMOD	The logic oscillator is failing.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
DTRCARD	Error code 1xxx 267A, 267B, or 267F indicates that the compute node is reporting a problem with the PCI Express (PCIe) expansion card.	<ol style="list-style-type: none"> <li>1. Reseat the PCIe expansion card.</li> <li>2. If the problem persists, replace the expansion card.</li> <li>3. If the problem persists, go to “Checkout procedure” on page 414.</li> <li>4. If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by **Trained service technician only**, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
FSPSP01	A part vital to a system function has been unconfigured. Review the system error logs for errors that have failing items that are relevant to each reason code.	<p>If replacing parts does not resolve the error, perform one of the following procedures, based on the SRC code that is listed after the FSPSP01 isolation procedure in the failing item list.</p> <p><b>If the SRC is B1xxB106</b></p> <p>The system has detected that the planars are unconfigured.</p> <ol style="list-style-type: none"> <li>1. Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol> <p><b>If the SRC is B1xxB107 or B1xxB108</b></p> <p>The system has detected a problem with a clock card.</p> <ol style="list-style-type: none"> <li>1. Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol> <p><b>If the SRC is B1xxB10C or B1xxB10D</b></p> <p>The system has detected an unconfigured memory controller that is required for the system to function, or it has detected that there is not enough memory or that the memory is plugged in incorrectly.</p> <ol style="list-style-type: none"> <li>1. Use the Advanced System Management Interface (ASMI) to determine if the memory controller is unconfigured. <ul style="list-style-type: none"> <li><b>Note:</b> To perform this operation, your authority level must be administrator or authorized service provider.</li> </ul> <ol style="list-style-type: none"> <li>a. On the ASMI Welcome pane, specify your user ID and password, and click <b>Log In</b>.</li> <li>b. In the navigation area, expand <b>System Service Aids &gt; Deconfiguration Records</b>.</li> <li>c. Is the memory controller unconfigured? <ul style="list-style-type: none"> <li>• <b>Yes:</b> Contact your next level of support.</li> <li>• <b>No:</b> Continue with the next step.</li> </ul> </li> <li>2. Ensure the memory is plugged correctly. See “Supported DIMMs” on page 48. Is the memory plugged correctly? <ul style="list-style-type: none"> <li>• <b>Yes:</b> Go to step 4.</li> <li>• <b>No:</b> Correct the memory plugging problem and continue with the next step.</li> </ul> </li> <li>3. Install the compute node into the IBM Flex System Enterprise Chassis and restart the compute node to verify whether the problem is solved. Does the problem persist? <ul style="list-style-type: none"> <li>• <b>Yes:</b> Continue with the next step.</li> <li>• <b>No: This ends the procedure.</b></li> </ul> </li> </ol> </li> </ol>

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
		<p>4. Perform the following steps:</p> <p>a. Reseat all of the memory DIMMs but do not replace any memory DIMMs at this time. Reseat the memory DIMMs as described in “Installing a DIMM” on page 46.</p> <p>b. Install the compute node into the IBM Flex System Enterprise Chassis and restart the compute node to verify whether the problem is solved. Does the problem persist?</p> <ul style="list-style-type: none"> <li><b>Yes:</b> Continue with the next step.</li> <li><b>No: This ends the procedure.</b></li> </ul> <p>5. Perform the following steps:</p> <p>a. Replace the first memory DIMM pair.</p> <p>b. Install the compute node into the IBM Flex System Enterprise Chassis and restart the compute node to verify whether the problem is solved. Does the problem persist?</p> <ul style="list-style-type: none"> <li><b>Yes:</b> Repeat this step and replace the next memory DIMM pair. If you have replaced all of the memory DIMM pairs, then continue with the next step.</li> <li><b>No: This ends the procedure.</b></li> </ul> <p>6. Replace the system-board and chassis assembly. <b>This ends the procedure.</b></p> <p><b>If the SRC is B1xxB110 or B1xxB111</b></p> <p>The system has detected that all of the I/O bridges are unconfigured.</p> <p>1. Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</p>
FSPSP02	This procedure is for boot failures that end early in the boot process or when the management card or the VPD data on the management card is not operational or is not present.	<p>1. Replace the management card, as described in “Removing the management card” on page 57 and “Installing the management card” on page 59.</p> <p>2. After replacing the card and installing the compute node in the chassis unit and before rebooting the compute node or performing other operations, ensure that the initialization of the VPD on the management card occurs by waiting for the management module to discover the compute node. Otherwise, the system might fail to perform an initial program load (IPL).</p> <p>3. If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</p>
FSPSP03	A system operator or user error has occurred.	Refer to the documentation for the function you were attempting to perform.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
FSPSP04	A problem has been detected in the service processor firmware.	<ol style="list-style-type: none"> <li>1. Perform a firmware update. See “Updating the firmware” on page 15.</li> <li>2. If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
FSPSP05	The service processor has detected a problem in the platform firmware.	<ol style="list-style-type: none"> <li>1. Perform a firmware update. See “Updating the firmware” on page 15.</li> <li>2. If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
FSPSP06	The service processor reported a suspected intermittent problem.	Contact your next level of support.
FSPSP07	The time of day has been reset to the default value.	<ol style="list-style-type: none"> <li>1. Use the <b>chdate</b> command to set the Virtual I/O Server date and time by using one of the following syntax statements:  <pre>chdate [-year YYyy]         [-month mm]         [-day dd]         [-hour HH]         [-minute MM]         [-timezone TZ]  chdate mmddHHMM[YYyy yy]         [-timezone TZ]</pre> </li> <li>2. If the problem persists, replace the battery, as described in “Removing the battery” on page 51 and “Installing the battery” on page 52.</li> </ol>

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
FSPSP09	A problem has been detected with a memory DIMM, but it cannot be isolated to a specific memory DIMM.	<p>Replace the failing item after this isolation procedure in the failing item list. If the failing item that is listed is a DIMM, complete the following steps:</p> <ol style="list-style-type: none"> <li>1. Replace both memory DIMMs of the pair: <ul style="list-style-type: none"> <li><b>DIMM 1 (P1-C1)</b> Replace DIMMs 1 and 2.</li> <li><b>DIMM 2 (P1-C2)</b> Replace DIMMs 1 and 2.</li> <li><b>DIMM 3 (P1-C3)</b> Replace DIMMs 3 and 4.</li> <li><b>DIMM 4 (P1-C4)</b> Replace DIMMs 3 and 4.</li> <li><b>DIMM 5 (P1-C5)</b> Replace DIMMs 5 and 6.</li> <li><b>DIMM 6 (P1-C6)</b> Replace DIMMs 5 and 6.</li> <li><b>DIMM 7 (P1-C7)</b> Replace DIMMs 7 and 8.</li> <li><b>DIMM 8 (P1-C8)</b> Replace DIMMs 7 and 8.</li> <li><b>DIMM 9 (P1-C9)</b> Replace DIMMs 9 and 10.</li> <li><b>DIMM 10 (P1-C10)</b> Replace DIMMs 9 and 10.</li> <li><b>DIMM 11 (P1-C11)</b> Replace DIMMs 11 and 12.</li> <li><b>DIMM 12 (P1-C12)</b> Replace DIMMs 11 and 12.</li> <li><b>DIMM 13 (P1-C13)</b> Replace DIMMs 13 and 14.</li> <li><b>DIMM 14 (P1-C14)</b> Replace DIMMs 13 and 14.</li> <li><b>DIMM 15 (P1-C15)</b> Replace DIMMs 15 and 16.</li> <li><b>DIMM 16 (P1-C16)</b> Replace DIMMs 15 and 16.</li> </ul> </li> </ol>

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
		<p><b>DIMM 17 (P1-C17)</b> Replace DIMMs 17 and 18.</p> <p><b>DIMM 18 (P1-C18)</b> Replace DIMMs 17 and 18.</p> <p><b>DIMM 19 (P1-C19)</b> Replace DIMMs 19 and 20.</p> <p><b>DIMM 20 (P1-C20)</b> Replace DIMMs 19 and 20.</p> <p><b>DIMM 21 (P1-C21)</b> Replace DIMMs 21 and 22.</p> <p><b>DIMM 22 (P1-C22)</b> Replace DIMMs 21 and 22.</p> <p><b>DIMM 23 (P1-C23)</b> Replace DIMMs 23 and 24.</p> <p><b>DIMM 24 (P1-C24)</b> Replace DIMMs 23 and 24.</p> <p><b>DIMM 25 (P1-C25)</b> Replace DIMMs 25 and 26.</p> <p><b>DIMM 26 (P1-C26)</b> Replace DIMMs 25 and 26.</p> <p><b>DIMM 27 (P1-C27)</b> Replace DIMMs 27 and 28.</p> <p><b>DIMM 28 (P1-C28)</b> Replace DIMMs 27 and 28.</p> <p><b>DIMM 29 (P1-C29)</b> Replace DIMMs 29 and 30.</p> <p><b>DIMM 30 (P1-C30)</b> Replace DIMMs 29 and 30.</p> <p><b>DIMM 31 (P1-C31)</b> Replace DIMMs 31 and 32.</p> <p><b>DIMM 32 (P1-C32)</b> Replace DIMMs 31 and 32.</p> <p>2. See “Removing a DIMM” on page 44 for location information and the removal procedure.</p> <p>3. Install new memory DIMMs, as described in “Installing a DIMM” on page 46.</p>

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
FSPSP10	The failing item that follows this procedure in the failing item list is not valid or is missing for this system's configuration.	<ol style="list-style-type: none"> <li>If there is only one failing item after this FSPSP10 isolation procedure in the failing item list:               <ol style="list-style-type: none"> <li>Verify that the failing item is installed, connected, and seated properly.</li> <li>If the failing item is seated properly and the problem persists, replace the failing item.</li> <li>If the failing item is missing, add the item.</li> </ol> </li> <li>If multiple failing items are listed, they have identical serial numbers. Remove all but one of the failing items.</li> </ol>
FSPSP11	The service processor has detected an error in the system unit.	<ol style="list-style-type: none"> <li>Perform a firmware update. See “Updating the firmware” on page 15.</li> <li>If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
FSPSP12	The DIMM that was in the failing item list did not correct the memory error.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
FSPSP14	The service processor cannot establish communication with the compute node firmware. The compute node firmware will continue to run the system and partitions while it attempts to recover the communications. Compute node firmware recovery actions will continue for approximately 30 - 40 minutes.	<ol style="list-style-type: none"> <li>View the event log in the management module to locate the SRC and the time that the event was logged. See “Error logs” on page 413. If progress codes are being displayed, the compute node firmware was able to reset the service processor and solve the problem.</li> <li>Record the time the log was created or when you first noticed this SRC.</li> <li>If progress codes are not being displayed, examine the management module event log to see if an A7006995 SRC has been displayed. If an A7006995 SRC has been displayed, the compute node is powering off partitions and attempting a compute node dump. Follow the action in the A7006995 SRC description if the partitions do not power down as requested.</li> <li>If an A7006995 SRC has not been displayed, has the A1xx SRC remained for more than 40 minutes? If so, the compute node firmware could not begin powering down the partitions. Contact your next level of support to assist in attempting to power down any remaining partitions and forcing a compute node dump. Collect the dump for support and power off and power on the compute node.</li> <li>If an A1xx SRC has not remained more than 40 minutes, contact your next level of support.</li> </ol>
FSPSP16	Save any error log and dump data and contact your next level of support for assistance.	Contact your next level of support.

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by <b>Trained service technician only</b>, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
FSPSP17	An uncorrectable system error has occurred.	Look for other serviceable events. Use the SRC indicated to determine and fix any problems.
FSPSP18	A problem has been detected in the platform Licensed Internal Code.	<ol style="list-style-type: none"> <li>Perform a firmware update. See “Updating the firmware” on page 15.</li> <li>If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
FSPSP20	A failing item has been detected by a hardware procedure.	Contact your next level of support.
FSPSP22	The system has detected that a processor chip is missing from the system configuration because JTAG lines are not working.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
FSPSP23	The system needs to perform a service processor dump.	<ol style="list-style-type: none"> <li>Log into the Advanced System Management Interface (ASMI) as the admin user (or with the celogin user ID).</li> <li>Click <b>System Service Aids &gt; Service Processor Dump</b>.</li> <li>Click <b>Initiate Dump</b>.</li> <li>Contact your authorized service provider for instructions about how to report the dump.</li> </ol>
FSPSP24	The system is running in a degraded mode. Array bit steering might be able to correct this problem without replacing hardware.	<ol style="list-style-type: none"> <li>Power off the compute node, as described in “Turning off the compute node” on page 11.</li> <li>Remove the compute node from the IBM Flex System Information Center and reinsert the compute node into the IBM Flex System Information Center.</li> <li>Power on the compute node, as described in “Turning on the compute node” on page 10.</li> <li>If the problem persists, replace the failing item that is in the failing item list after this procedure.</li> </ol>
FSPSP27	A problem has been detected on an attention line.	Replace the failing item that precedes this isolation procedure in the failing item list. If the failing item does not correct the problem, contact your next level of support.
FSPSP28	The resource ID of the failing item could not be found in the vital product data (VPD) table.	<ol style="list-style-type: none"> <li>Find another item in the failing item list that reads “FSPxxxx” where xxxx is a 4-digit hexadecimal number that represents the resource ID. Record the resource ID and the model of the system.</li> <li>Contact your next level of support to find out which failing item the resource ID represents.</li> <li>Replace the failing item that the resource ID represents.</li> </ol>



<ul style="list-style-type: none"> <li>• Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>• See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>• If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
FSPSP29	The system has detected that all I/O bridges are missing from the system configuration.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
FSPSP30	<p>A problem has been encountered accessing the management card or the vital product data (VPD) found on the management card has been corrupted.</p> <p>This error occurred before the VPD collection was completed, so no location codes have been created.</p>	<ol style="list-style-type: none"> <li>1. Replace the management card, as described in “Removing the management card” on page 57 and “Installing the management card” on page 59.</li> <li>2. After replacing the card and installing the compute node in the chassis unit and before rebooting the compute node or performing other operations, ensure that the initialization of the VPD on the management card occurs by waiting for the management module to discover the compute node. Otherwise, the system might fail to perform an initial program load (IPL).</li> <li>3. If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
FSPSP31	The service processor has detected that one or more of the required fields in the system VPD has not initialized.	<p>This procedure must be performed by an authorized service provider and requires a <b>celogin</b> user ID. If you are not an authorized service provider, contact your next level of support.</p> <ol style="list-style-type: none"> <li>1. Access the Advanced System Management Interface (ASMI). Expand <b>System Configuration &gt; Program Vital Product Data</b>. Set the system VPD values as required. This action automatically resets the service processor.</li> <li>2. Power on the compute node, as described in “Turning on the compute node” on page 10.</li> </ol>

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
FSPSP32	<p>The enclosure has one of the following problems:</p> <ul style="list-style-type: none"> <li>• The enclosure VPD cannot be found.</li> <li>• The enclosure serial number is not programmed.</li> <li>• The enclosure feature code is not programmed.</li> </ul>	<p>Record the reason code, which is the last 4 digits of the first word from the SRC. Perform one of the following procedures based on the value of the reason code:</p> <ul style="list-style-type: none"> <li>• <b>Reason code A46F</b> <ol style="list-style-type: none"> <li>1. Perform a firmware update. See “Updating the firmware” on page 15.</li> <li>2. If the problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol> </li> <li>• <b>Reason code A460</b> <p>This procedure must be performed by an authorized service provider and requires a <b>celogin</b> user ID. If you are not an authorized service provider, contact your next level of support.</p> <ol style="list-style-type: none"> <li>1. Access the Advanced System Management Interface (ASMI). Expand <b>System Configuration &gt; Program Vital Product Data</b>. Set the enclosure serial number. This action automatically resets the service processor.</li> <li>2. Power on the compute node, as described in “Turning on the compute node” on page 10.</li> </ol> </li> <li>• <b>Reason code A45F</b> <p>This procedure must be performed by an authorized service provider and requires a <b>celogin</b> user ID. If you are not an authorized service provider, contact your next level of support.</p> <ol style="list-style-type: none"> <li>1. Access the Advanced System Management Interface (ASMI). Expand <b>System Configuration &gt; Program Vital Product Data</b>. Set the enclosure feature code. This action automatically resets the service processor.</li> <li>2. Power on the compute node, as described in “Turning on the compute node” on page 10.</li> </ol> </li> </ul> <p>If you do not see your reason code listed, contact your next level of support.</p>

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
FSPSP34	The memory cards are plugged in an invalid configuration and cannot be used by the system.	<p>Install a DIMM for each of the dual processors on the IBM Flex System p24L Compute Node. Install the first pair in DIMM connectors 1 and 2.</p> <p>Look for the following error codes in order. Follow the procedure for the first code you find.</p> <p><b>SRC B1xx C02A</b> A memory card is missing from the system.</p> <p>The additional parts in the failing item list include all memory cards in the group with the missing card. To correct the error, visually check the system to determine which card is missing, and add the card.</p> <p><b>SRC B1xx C029</b> A memory card is a different type than the other memory cards in the same group.</p> <p>The additional parts in the failing item list include all memory cards in the group that contain the error. To correct the error, exchange the memory cards of the incorrect type with those of the correct type.</p> <p><b>SRC B1xx C02B</b> A group of memory cards is missing and is required so that other memory cards on the board can be configured.</p> <p>The additional parts in the failing item list include all the missing memory cards in the group. To correct the error, add or move the memory cards to the correct locations.</p> <p><b>SRC B1xx C036</b> A memory card is not supported in this system.</p> <p>The additional parts in the failing item list include all memory cards in the group that contain the unsupported cards. To correct the error, remove the unsupported cards from the system or replace them with the correct type.</p>
FSPSP35	The system has detected a problem with a memory controller.	<p>Enable redundant utilization by performing the following procedure:</p> <ol style="list-style-type: none"> <li>Power off the compute node, as described in “Turning off the compute node” on page 11.</li> <li>Remove the compute node from the IBM Flex System Information Center and reinsert the compute node.</li> <li>Power on the compute node, as described in “Turning on the compute node” on page 10.</li> </ol>
FSPSP38	The system has detected an error within the JTAG path.	Replace the failing item that is before this isolation procedure in the failing item list. If the failing item that you replace does not correct the problem, contact your next level of support.
FSPSP42	An error communicating between two system processors was detected.	Contact your next level of support.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
<b>FSPSP45</b>	The system has detected an error within the FSI path.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>FSPSP46</b>	Some corrupt areas of flash or RAM have been detected on the service processor.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>FSPSP47</b>	The system has detected an error within the PSI link.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
<b>FSPSP48</b>	A diagnostics function detects an external processor interface problem.	If the failing items preceding this isolation procedure in the failing item list do not fix the problem, contact your next level of support.
<b>FSPSP49</b>	A diagnostic function detects an internal processor interface problem.	If the failing items preceding this isolation procedure in the failing item list do not fix the problem, contact your next level of support.
<b>FSPSP50</b>	A diagnostic function detects a connection problem between a processor chip and a GX chip.	If the failing items preceding this isolation procedure in the failing item list do not fix the problem, contact your next level of support.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
FSPSP51	Runtime diagnostics has detected a memory bus correctable error that exceeds the threshold. The memory bus correctable error does not threaten the system operation at the moment; however, the system is operating in a degraded mode.	<p>Replace the failing item after this isolation procedure in the failing item list. If the failing item that is listed is a DIMM, complete the following steps:</p> <ol style="list-style-type: none"> <li>1. Replace both memory DIMMs of the pair:</li> </ol> <p><b>DIMM 1 (P1-C1)</b> Replace DIMMs 1 and 2.</p> <p><b>DIMM 2 (P1-C2)</b> Replace DIMMs 1 and 2.</p> <p><b>DIMM 3 (P1-C3)</b> Replace DIMMs 3 and 4.</p> <p><b>DIMM 4 (P1-C4)</b> Replace DIMMs 3 and 4.</p> <p><b>DIMM 5 (P1-C5)</b> Replace DIMMs 5 and 6.</p> <p><b>DIMM 6 (P1-C6)</b> Replace DIMMs 5 and 6.</p> <p><b>DIMM 7 (P1-C7)</b> Replace DIMMs 7 and 8.</p> <p><b>DIMM 8 (P1-C8)</b> Replace DIMMs 7 and 8.</p> <p><b>DIMM 9 (P1-C9)</b> Replace DIMMs 9 and 10.</p> <p><b>DIMM 10 (P1-C10)</b> Replace DIMMs 9 and 10.</p> <p><b>DIMM 11 (P1-C11)</b> Replace DIMMs 11 and 12.</p> <p><b>DIMM 12 (P1-C12)</b> Replace DIMMs 11 and 12.</p> <p><b>DIMM 13 (P1-C13)</b> Replace DIMMs 13 and 14.</p> <p><b>DIMM 14 (P1-C14)</b> Replace DIMMs 13 and 14.</p> <p><b>DIMM 15 (P1-C15)</b> Replace DIMMs 15 and 16.</p> <p><b>DIMM 16 (P1-C16)</b> Replace DIMMs 15 and 16.</p>

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Isolation procedure or symbolic failing item	Symptom	Action
		<p><b>DIMM 17 (P1-C17)</b> Replace DIMMs 17 and 18.</p> <p><b>DIMM 18 (P1-C18)</b> Replace DIMMs 17 and 18.</p> <p><b>DIMM 19 (P1-C19)</b> Replace DIMMs 19 and 20.</p> <p><b>DIMM 20 (P1-C20)</b> Replace DIMMs 19 and 20.</p> <p><b>DIMM 21 (P1-C21)</b> Replace DIMMs 21 and 22.</p> <p><b>DIMM 22 (P1-C22)</b> Replace DIMMs 21 and 22.</p> <p><b>DIMM 23 (P1-C23)</b> Replace DIMMs 23 and 24.</p> <p><b>DIMM 24 (P1-C24)</b> Replace DIMMs 23 and 24.</p> <p><b>DIMM 25 (P1-C25)</b> Replace DIMMs 25 and 26.</p> <p><b>DIMM 26 (P1-C26)</b> Replace DIMMs 25 and 26.</p> <p><b>DIMM 27 (P1-C27)</b> Replace DIMMs 27 and 28.</p> <p><b>DIMM 28 (P1-C28)</b> Replace DIMMs 27 and 28.</p> <p><b>DIMM 29 (P1-C29)</b> Replace DIMMs 29 and 30.</p> <p><b>DIMM 30 (P1-C30)</b> Replace DIMMs 29 and 30.</p> <p><b>DIMM 31 (P1-C31)</b> Replace DIMMs 31 and 32.</p> <p><b>DIMM 32 (P1-C32)</b> Replace DIMMs 31 and 32.</p> <p>2. See “Removing a DIMM” on page 44 for location information and the removal procedure.</p> <p>3. Install new memory DIMMs, as described in “Installing a DIMM” on page 46.</p>

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
FSPSP53	A network error occurred between the service processor and the network switch that is on the compute node.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
FSPSP54	A processor over-temperature was detected. Check for environmental problems before replacing any parts.	<ol style="list-style-type: none"> <li>1. Measure the ambient room temperature to see if it is within the upper limit of the normal operating range. The upper limit is less than 35° C or 95° F. If the temperature exceeds this limit, you must lower the room temperature until it is within the limit. When the temperature is within range, retry the operation.</li> <li>2. If the temperature is within the acceptable range, check the front and rear of the IBM Flex System Enterprise Chassis to verify that both areas are free of obstructions that impede the airflow. If there are obstructions, you must clear the obstructions. Also, clean the air inlets and exits in the IBM Flex System Enterprise Chassis drawer as required. If you cleared obstructions, retry the operation.</li> <li>3. Verify that the fans in the IBM Flex System Enterprise Chassis are working correctly. If they are not, replace fans that are not turning or that are turning slowly. If you replace fans, wait for the unit to cool and retry the operation.</li> <li>4. If the cooling components are functioning correctly, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
FSPSP84	A problem has been detected in the connection with the IBM Chassis Management Module (CMM).	<p>If the reference code is B1818BC1, the service processor was reset but the problem was not resolved. The service processor is no longer accessible. Perform the following actions one at a time until the problem is resolved:</p> <ol style="list-style-type: none"> <li>1. Reseat the compute node.</li> <li>2. Move the compute node to a different location in the chassis.</li> <li>3. Perform a firmware update. See “Updating the firmware” on page 15.</li> </ol> <p>If these actions do not resolve the problem, contact your next level of support.</p> <p>If the reference code is B1818BC2, the service processor was reset, which should resolve the problem. If problems persist, perform a firmware update. See “Updating the firmware” on page 15. If that does not resolve the problem, contact your next level of support.</p>
IOBRDG	The failing component is the RIO/HSL I/O bridge on the IPL path.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
IOHUB	The failing component is the RIO/HSL network interface card (NIC) on the IPL path.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
I2CBUS	The failing component is the I2C bus.	Read the description of the system reference code (SRC) and perform any actions indicated there. If that does not resolve the problem, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
MEMBRD	The failing component is the board that the memory DIMMs plug into.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
MEMCTLR	The failing component is one of the memory controllers.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.
MEMDIMM	The failing component is one of the memory DIMMs.	<ol style="list-style-type: none"> <li>Replace the failing DIMM. See “Removing a DIMM” on page 44 for location information and for the removal procedure.</li> <li>Install new memory DIMMs, as described in “Installing a DIMM” on page 46.</li> </ol> <p>For more information, see “Supported DIMMs” on page 48.</p>
NO12VDC	Error code 1xxx2647 indicates that the compute node is reporting that 12V dc is not present on the IBM Flex System Enterprise Chassis midplane.	<ol style="list-style-type: none"> <li>Check the management-module event log for entries that indicate a power problem with the IBM Flex System Enterprise Chassis.</li> <li>Resolve any problems.</li> <li>Power off the compute node, as described in “Turning off the compute node” on page 11.</li> <li>Remove the compute node from the IBM Flex System Enterprise Chassis, and then reinsert the compute node.</li> <li>Power on the compute node.</li> <li>Monitor the compute node operation to verify that the problem is solved.</li> <li>If the IBM Flex System Enterprise Chassis is functioning normally but the 1xxx2647 problem persists, replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>
NODEPL	The failing component is the node midplane.	Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.



<ul style="list-style-type: none"> <li>• Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>• See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>• If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Isolation procedure or symbolic failing item	Symptom	Action
TOD_BAT	The battery for the time-of-day battery is low or failing.	Replace the battery, as described in “Removing the battery” on page 51 and “Installing the battery” on page 52.
TPMD_OV	The thermal power management firmware has detected that the system is operating without power supply redundancy. The maximum power limit based on the compute node configuration was reached and action was taken to reduce power consumption.	<ol style="list-style-type: none"> <li>1. Check the Active Status log from the IBM Flex System Manager or the Event log from the Hardware Management Console (HMC), or the application log from the Integrated Virtualization Manager (IVM) for any events that are related to power and resolve them. You can access the Active Status log or the Event log from the Chassis Manager.</li> <li>2. Check the power management policy that is in place for the IBM Flex System Enterprise Chassis. The power management policy can affect the amount of power that is available to a compute node, which can cause the compute node to reduce power consumption.</li> <li>3. Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>

## Software problems

Use this information to recognize software problem symptoms and to take corrective actions.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.
- If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.

Symptom	Action
You suspect a software problem.	<ol style="list-style-type: none"><li>1. To determine whether the problem is caused by the software, complete the following items:<ul style="list-style-type: none"><li>• The compute node has the minimum memory that is needed to use the software. For memory requirements, see the information that comes with the software. <b>Note:</b> If you have just installed an adapter or memory, the compute node might have a memory-address conflict.</li><li>• The software is designed to operate on the compute node.</li><li>• Other software works on the compute node.</li><li>• The software works on another compute node.</li></ul></li><li>2. If you received any error messages when using the software, see the information that comes with the software for a description of the messages and suggested solutions to the problem.</li><li>3. Contact your place of purchase of the software.</li><li>4. To check the operating system logs for information about the source of the error, first check the ServerProven plan and then complete the following items:<ol style="list-style-type: none"><li>a. For AIX: To view a summary of the error log, use the <b>errpt</b> command. To view a formatted report of the data for the errors in the log, use the <b>errpt-a</b> command.</li><li>b. For Linux: The <code>/var/log/messages</code> text file should be retrieved and filtered or viewed as necessary. There are no standardized analysis tools, but scripts can be written to simplify the view to what you need.</li><li>c. For IBM i: Existing problem log entries are available through the <b>WRKPRB</b> command. To create a new log entry, use the <b>ANZPRB</b> command.</li></ol></li></ol>

## Light path diagnostics

Light path diagnostics is a system of LEDs on the control panel and on the system board of the compute node. When an error occurs, LEDs are lit throughout the compute node. If the control panel indicates an error, use the descriptions of the LEDs to diagnose the problem and to take corrective action.

LEDs are available for the following components:

- Battery
- SAS disk drive
- SSD
- Management card
- Memory modules (DIMMs)
- Network adapter
- System-board and chassis assembly

## Viewing the light path diagnostic LEDs

After reading the required safety information, look at the control panel to determine whether the LEDs indicate a suboptimal condition or an error.

### About this task

View the system LEDs remotely through the Chassis Manager in the web interface of the IBM Flex System Manager management software. To view the system LEDs remotely by using the Hardware Management Console (HMC), see LED Status. To view the system LEDs status by using the Integrated Virtualization Manager (IVM), see IVM lsled command. The main LED page shows the external LEDs on the compute node. The internal compute node LEDs are also available through a link from the LED page. This function enables you to see the status of the internal LEDs on the compute node without having to turn off the compute node, remove it from the chassis, and activate the light path indications.

Before working inside the compute node to view light path diagnostic LEDs, see the Safety topic and the “Handling static-sensitive devices” on page 28 guidelines.

If an error occurs, view the light path diagnostic LEDs in the following order:

### Procedure

1. Look at the control panel on the front of the compute node. See “Compute node control panel button and LEDs” on page 9.
  - If the check log LED is lit, it indicates that information about a suboptimal condition in the compute node is available in the management-module event log.
  - If the enclosure fault LED is lit, it indicates that an error occurred and that you can proceed to the next step.
2. If an error occurred, view the light path diagnostics panel and LEDs:
  - a. Shut down the operating system on all partitions of the compute node, turn off the compute node, and remove the compute node from the IBM Flex System Enterprise Chassis. See “Removing the compute node from an IBM Flex System Enterprise Chassis” on page 29.
  - b. Place the compute node on a flat, static-protective surface.
  - c. Remove the cover from the compute node.
  - d. Press and hold the power-control button on the front panel to relight the LEDs that were lit before you removed the compute node from the IBM Flex System Enterprise Chassis. The LEDs will remain lit for as long as you press the power-control button, to a maximum of 30 seconds.

The following figure shows LEDs on the IBM Flex System p24L Compute Node. The following figures and table shows the system-board LEDs.

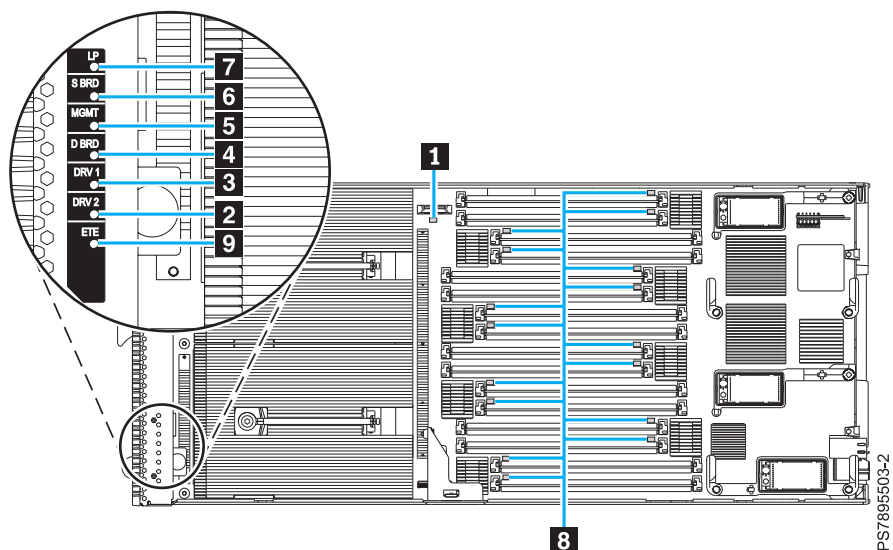


Figure 34. LED locations on the system board of the IBM Flex System p24L Compute Node

The following table identifies the light path diagnostic LEDs.

Table 16. IBM Flex System p24L Compute Node LEDs

Callout	Unit LEDs
<b>1</b>	3 V lithium battery LED
<b>2</b>	DRV2 LED (HDD or SSD)
<b>3</b>	DRV1 LED (HDD or SSD)
<b>4</b>	Drive board LED (solid-state drive interposer, which is integrated in the cover)
<b>5</b>	Management card LED
<b>6</b>	System board LED
<b>7</b>	Light path power LED
<b>8</b>	DIMM LEDs
<b>9</b>	ETE connector LED

## Light path diagnostics LEDs

Use the descriptions of the LEDs to diagnose the problem and to take corrective action.

Table 17 describes the LEDs on the system board and the suggested actions for correcting any detected problems.

Table 17. IBM Flex System p24L Compute Node

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Light path diagnostics LED is lit	Description	Action
None	An error occurred and cannot be isolated, or the service processor failed.	An error occurred that is not represented by a light path diagnostics LED. Check the event log for information about the error.
Battery error P1-E1	A battery error occurred.	Replace the battery, as described in “Removing the battery” on page 51 and “Installing the battery” on page 52.
DIMM x error  P1-C1 DIMM 1 P1-C2 DIMM 2 P1-C3 DIMM 3 P1-C4 DIMM 4 P1-C5 DIMM 5 P1-C6 DIMM 6 P1-C7 DIMM 7 P1-C8 DIMM 8 P1-C9 DIMM 9 P1-C10 DIMM 10 P1-C11 DIMM 11 P1-C12 DIMM 12 P1-C13 DIMM 13 P1-C14 DIMM 14 P1-C15 DIMM 15 P1-C16 DIMM 16	A memory error occurred.	<ol style="list-style-type: none"> <li>Verify that the DIMM indicated by the lit LED is a supported memory module, as described on the ServerProven website.</li> <li>Replace the DIMM indicated by the lit LED, as described in “Removing a DIMM” on page 44 and “Installing a DIMM” on page 46.</li> </ol> <p><b>Note:</b> Multiple DIMM LEDs do not necessarily indicate multiple DIMM failures. If more than one DIMM LED is lit, replace one DIMM at a time until the error goes away.</p>
Drive 1 error P1-D1 P1-C17-D1	An error occurred on drive 1.	Replace the disk drive or solid-state drive. See “Removing a SAS hard disk drive” on page 36 or “Removing a SATA solid-state drive” on page 42.
Drive 2 error P1-D2 P1-C17-D2	An error occurred on drive 2.	Replace the solid-state drive. See “Removing a SATA solid-state drive” on page 42.
Network adapter error P1-C18 P1-C19	A network adapter error occurred.	<ol style="list-style-type: none"> <li>Make sure that the network adapter is supported.</li> <li>Replace the network adapter, as described in “Removing a network adapter” on page 49 and “Installing a network adapter” on page 50.</li> </ol> <p>If you are still having problems, see the ServerProven website.</p>

Table 17. IBM Flex System p24L Compute Node (continued)

<ul style="list-style-type: none"> <li>Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.</li> <li>See Chapter 7, “Parts listing for IBM Flex System p24L Compute Node,” on page 79 to determine which components are CRUs and which components are FRUs.</li> <li>If an action step is preceded by Trained service technician only, that step must be performed only by a trained service technician.</li> </ul>		
Light path diagnostics LED is lit	Description	Action
Management card error P1-C21	A system board error occurred.	Replace the management card assembly, as described in “Removing the management card” on page 57 and “Installing the management card” on page 59.
System board error P1	A system-board and chassis assembly error has occurred. A microprocessor failure shows up as a system-board and chassis assembly error.	<ol style="list-style-type: none"> <li>1. Replace the compute node cover, reinsert the compute node in the IBM Flex System Enterprise Chassis, and then restart the compute node.</li> <li>2. Check the event log for information about the error.</li> <li>3. Replace the system-board and chassis assembly, as described in “Replacing the system-board and chassis assembly” on page 67.</li> </ol>

## Isolating firmware problems

You can use this procedure to isolate firmware problems.

### About this task

To isolate a firmware problem, follow the procedure until the problem is solved.

### Procedure

1. If the compute node is operating, shut down the operating system. Use the CMM to perform a virtual reseal. If the problem no longer occurs, no further action is necessary. You are finished with this procedure.
2. Start the PERM image. See “Starting the PERM image” on page 453.
3. Verify the system firmware levels. See “Verifying the system firmware levels” on page 17.
4. Choose one of the following options:
  - Remain on the current firmware level. See “Recovering the TEMP image from the PERM image” on page 453.
  - Check the RETAIN tips and code change history. If a firmware update is needed, see “Updating the firmware” on page 15.

5. If the problem is not resolved, contact your next level of support.

## Save vfchost map data

Before you replace physical components on your compute node, it might be necessary to first save the original virtual Fibre Channel vfchost data of your compute node.

### Procedure

To save the original vfchost data and the original physical Fibre Channel adapter port (fcs) location codes, complete the following steps by using the **padmin** user account:

1. To save the original vfchost data, use the **lsmap** command as follows. Enter the command from the command-line interface on the source Virtual I/O Server (VIOS):

```
lsmap -all -npiv | tee lsmap_OUTPUT_before
```

The output might look like the following example:

Name	Physloc	CIntID	CIntName	CIntOS
vfchost1	U7895.42X.9999999-V1-C32	3		
Status	NOT_LOGGED_IN			
FC name	fcs1		FC loc code:U78AF.001.startSN-P1-C35-L1-T2	
Ports logged in	0			
Flags	4<NOT_LOGGED>			
VFC client name			VFC client DRC	

Name	Physloc	CIntID	CIntName	CIntOS
vfchost2	U7895.42X.9999999-V1-C33	4	cli_lpar_1	AIX
Status	LOGGED_IN			
FC name	fcs0		FC loc code:U78AF.001.startSN-P1-C35-L1-T1	
Ports logged in	1			
Flags	a<LOGGED_IN,STRIP_MERGE>			
VFC client name	fcs1		VFC client DRC:U9999.999.9999999-V4-C32-T1	

In this example, the original serial number is represented as startSN.

2. To save the location code information for each Fibre Channel adapter (fcs), enter the **lsdev** command as follows:

```
lsdev -vpd | grep fcs | tee LSDEV_OUTPUT_before
```

The output might look like the following example:

```
fcs0 U78AF.001.startSN-P1-C35-L1-T1 Dual Port 8Gb FC Mezzanine Card (7710322577107501)
fcs1 U78AF.001.startSN-P1-C35-L1-T2 Dual Port 8Gb FC Mezzanine Card (7710322577107501)
```

In this example, the original serial number is represented as startSN.

## Restore vfchost map data

After you replace physical components on your compute node, you must review the virtual Fibre Channel vfchost mapping. If the vfchost mapping has changed after component replacement, you must restore the mapping.

### Before you begin

To restore vfchost data, you must have first saved the original vfchost data and the physical Fibre Channel adapter (fcs) location code information. For information, see “Save vfchost map data” on page 451.

### Procedure

To restore the vfchost mapping data, use the third field of the Fibre Channel adapter (fcs) location codes, which is the serial number field, and compare the new Fibre Channel adapter (fcs) location codes to the original location codes. Perform a **vfcmmap** of the new Fibre Channel adapter (fcs) to the appropriate vfchost.

To restore the vfchost mapping data, complete the following steps by using the **padmin** user account:

1. To save the new Fibre Channel adapter (fcs) location codes, use the **lsdev -vpd** command as follows. Enter the command from the command-line interface on the source Virtual I/O Server (VIOS):

```
lsdev -vpd | grep fcs | tee LSDEV_OUTPUT_after1
```

The output might look like the following example:

```
fcs0 U78AF.001.startSN-P1-C35-L1-T1 Dual Port 8Gb FC Mezzanine Card (7710322577107501)
fcs1 U78AF.001.startSN-P1-C35-L1-T2 Dual Port 8Gb FC Mezzanine Card (7710322577107501)
```

2. To associate the new fcsx adapter to the old fcsx adapter use the adapter slot number. Enter the **grep** command as shown in the example below:

```
grep "P1-C35-L1-T1" LSDEV_OUTPUT_before LSDEV_OUTPUT_after
```

The output might look like the following example:

```
LSDEV_OUTPUT_before:
fcs0 U78AF.001.startSN-P1-C35-L1-T1 Dual Port 8Gb FC Mezzanine Card (7710322577107501)
LSDEV_OUTPUT_after1:
fcs0 U78AF.001.newSN99-P1-C35-L1-T1 Dual Port 8Gb FC Mezzanine Card (7710322577107501)
```

In this example, the original serial number is represented as startSN, the new serial number is represented as newSN99, and the fcsx remained fcs0; therefore, fcs0 will be mapped to the vfchost.

3. To restore the new fcsx device to the correct vfchost, enter the **vfcmmap** command as follows:

```
vfcmmap -vadapter vfchost0 -fcp fcs0
```

4. To check the vfchost mapping, enter the **lsmap** command as follows:

```
lsmap -vadapter vfchost2 -npiv
```

The output might look like the following example:

Name	Physloc	CIntID	CIntName	CIntOS
vfchost2	U7895.42X.9999999-V1-C33	4		

Status	NOT_LOGGED_IN			
FC name	fcs0	FC loc code:	U78AF.001.newSN99-P1-C35-L1-T1	
Ports logged in	0			
Flags	4<NOT_LOGGED>			
VFC client name		VFC client	DRC	

In this example, the new serial number is represented as newSN99.



## Recovering the system firmware

The system firmware is contained in separate temporary and permanent images in the flash memory of the compute node. These images are referred to as TEMP and PERM, respectively. The compute node normally starts from the TEMP image, and uses the PERM image as a backup. If the TEMP image becomes damaged, such as from a power failure during a firmware update, you can recover the TEMP image from the PERM image.

### About this task

If your system hangs, start the PERM image. See “Starting the PERM image.”

### Starting the PERM image

You can force the compute node to start the permanent (PERM) image.

### About this task

To force the compute node to start the PERM image, see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_power\\_firmware.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_power_firmware.html).

### Starting the TEMP image

The system firmware is contained in separate temporary and permanent images in the flash memory of the compute node. These images are referred to as TEMP and PERM, respectively. The compute node normally starts from the TEMP image. Start the TEMP image before you update the firmware.

### About this task

To start the TEMP image, see [http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm\\_managing\\_hosts\\_power\\_firmware.html](http://publib.boulder.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.hosts.doc/dpsm_managing_hosts_power_firmware.html).

### Recovering the TEMP image from the PERM image

To recover the TEMP image from the PERM image, you must perform the reject function. The reject function copies the PERM image into the TEMP image.

### About this task

To perform the reject function, complete the following steps:

#### Procedure

1. If you have not started the system from the PERM image, do so now. See “Starting the PERM image.”
2. Issue the appropriate command for your operating system to reject the TEMP image:
  - If you are using the Red Hat Enterprise Linux or SUSE Linux operating system, type the following command:  
`update_flash -r`

3. Start the TEMP image, as described in “Starting the TEMP image” on page 17.

## What to do next

You might need to update the firmware code to the latest version. See “Updating the firmware” on page 15 for more information about how to update the firmware code.

## Verifying the system firmware levels

The diagnostics program displays the current system firmware levels for the temporary (TEMP) and permanent (PERM) images. This function also displays which image the compute node used to start.

### Procedure

1. Start the diagnostics program.
2. From the **Function Selection** menu, select **Task Selection** and press Enter.
3. From the **Tasks Selection List** menu, select **Update and Manage System Flash** and press **Enter**.  
The top of the **Update and Manage System Flash** menu displays the system firmware level for the PERM and the TEMP images and the image that the compute node used to start.

**Note:** If the TEMP image level is more current than the PERM image, commit the TEMP image.

4. When you have verified the firmware levels, press F3 until the Diagnostic Operating Instructions window is displayed, and then press F3 again to exit the diagnostic program.

## Committing the TEMP system firmware image

After updating the system firmware and successfully starting the compute node from the temporary (TEMP) image, copy the TEMP image to the permanent (PERM) image by using the diagnostics program commit function.

## About this task

**Note:** If you install the compute node firmware update permanently by committing the temporary firmware level from the temporary side to the permanent side, the temporary and permanent sides contain the same level of firmware. You cannot return to the level that was previously on the permanent side.

### Procedure

1. Load the diagnostics program. See “Running the diagnostics program” on page 415.
2. From the Function Selection menu, select **Task Selection** and press Enter.
3. From the Tasks Selection List menu, select **Update and Manage System Flash** and press Enter.
4. From the Update and Manage System Flash menu, select **Commit the Temporary Image** and press Enter.
5. When the commit function is complete, press F3 until the Diagnostic Operating Instructions window is displayed. Then, press F3 again to exit the diagnostic program.

## Solving shared IBM Flex System Enterprise Chassis resource problems

Problems with shared resources might appear to be in the compute node, but might actually be a problem in a IBM Flex System Enterprise Chassis component.

### About this task

This information provides procedures to help you isolate compute node problems from shared resource problems.

If the problem is thought to be with a shared resource, see the following documentation for additional information:

- *Problem Determination and Service Guide* for your IBM Flex System Enterprise Chassis
- *Hardware Maintenance Manual and Troubleshooting Guide* for your IBM Flex System Enterprise Chassis
- If the problem cannot be solved, see “Solving undetermined problems” on page 457.

To check the general function of shared resources, complete the following steps:

### Procedure

1. Verify that the required power modules are installed in the IBM Flex System Enterprise Chassis and that the chassis is connected to a working power source.
2. Verify that power management is set correctly for your IBM Flex System Enterprise Chassis configuration.
3. Verify whether the problem is being experienced on more than one compute node.
4. Perform a test of the failing function on a compute node that is known to be operational.
5. Try the compute node in a different bay.
6. Try a compute node that is known to be operational in the bay with the failing compute node.
7. Verify that the compute node and the monitor are powered on.
8. Check for network connection problems, as described in “Solving shared network connection problems.”
9. Check for power problems, as described in “Solving shared power problems” on page 456.

### Solving shared network connection problems

Problems with shared resources might appear to be in the compute node, but might actually be a problem in a IBM Flex System Enterprise Chassis network connection resource.

## About this task

To check the general function of shared network connection resources, complete the following steps:

### Procedure

1. Verify that the network cables are securely connected to the I/O module.
2. Verify that the power configuration of the IBM Flex System Enterprise Chassis supports the I/O module configuration.
3. Verify that the installation of the I/O-module type is supported by the IBM Flex System Enterprise Chassis and compute node hardware.
4. Verify that the I/O modules for the network interface are installed in the correct bays of the IBM Flex System Enterprise Chassis.
5. Verify that the I/O modules for the network interface are configured correctly.
6. Verify that the settings in the I/O module are correct for the compute node. Some settings in the I/O module are specifically for each compute node.
7. Verify that the I/O modules for the network interface are operating correctly.  
Troubleshoot and replace the I/O module as indicated in the documentation for the I/O module.
8. Verify that the management module is operating correctly.
9. Replace the management module.

### Results

If these steps do not resolve the problem, it is probably a problem with the compute node. See "Connectivity problems" on page 421 for more information.

## Solving shared power problems

Problems with shared resources might appear to be in the compute node, but might actually be a problem in a IBM Flex System Enterprise Chassis power component.

## About this task

To check the general function of shared power resources, complete the following steps:

### Procedure

1. Verify that the LEDs on all the power modules of the IBM Flex System Enterprise Chassis are lit.
2. Verify that power is being supplied to the IBM Flex System Enterprise Chassis.
3. Verify that the installation of the compute node type is supported by the IBM Flex System Enterprise Chassis.
4. Verify that the power configuration of the IBM Flex System Enterprise Chassis supports the bay where your compute node is installed.
5. Verify that the power management configuration and status of the IBM Flex System Enterprise Chassis support compute node operation.

See the information center for your management module or the *Management Module User's Guide* or the *Management Module Command-Line Interface Reference Guide* for more information.

6. Verify that the local power control for the compute node is set correctly.  
See the information center for your management module or the *Management Module User's Guide* or the *Management Module Command-Line Interface Reference Guide* for more information.
7. Verify that the IBM Flex System Enterprise Chassis blowers are correctly installed and operational.

## Solving undetermined problems

When you are diagnosing a problem in the IBM Flex System p24L Compute Node, you must determine whether the problem is in the compute node or in the IBM Flex System Enterprise Chassis.

### About this task

- If all of the compute nodes have the same symptom, it is probably a problem in the IBM Flex System Enterprise Chassis.

For more information, see the following documentation:

- *Hardware Maintenance Manual and Troubleshooting Guide* for your IBM Flex System Enterprise Chassis
- *Problem Determination and Service Guide* for your IBM Flex System Enterprise Chassis

- If the IBM Flex System Enterprise Chassis contains more than one compute node and only one of the compute nodes has the problem, troubleshoot the compute node that has the problem.

Check the LEDs on all the power supplies of the IBM Flex System Enterprise Chassis where the compute node is installed. If the LEDs indicate that the power supplies are working correctly, and powering off and powering on the compute node does not correct the problem, complete the following steps:

### Procedure

1. Use the management console to determine if the compute node is recognized.
2. Use the management console to ensure that power-on permission is not denied due to power policy settings.
3. Turn off the compute node.
4. Remove the compute node from the IBM Flex System Enterprise Chassis, and remove the cover.
5. Remove or disconnect the following devices, one at a time, until you find the failure. Reinstall, turn on, and reconfigure the compute node each time.
  - I/O expansion cards.
  - Hard disk drives.
  - Memory modules. The minimum configuration requirement is 8 GB (two 4 GB DIMMs).

The following minimum configuration is required for the compute node to start:

- System-board and chassis assembly (with two microprocessors)
  - Two 4 GB DIMMs
  - A functioning IBM Flex System Enterprise Chassis
6. Install and turn on the compute node. If the problem remains, suspect the following components in order:
    - a. DIMM
    - b. System-board and chassis assembly

## Results

If the problem is solved when you remove an I/O expansion card from the compute node but the problem recurs when you reinstall the same expansion card, suspect the expansion card; if the problem recurs when you replace the expansion card with a different one, suspect the system-board and chassis assembly.

If you suspect a networking problem and the compute node passes all the system tests, suspect a network cabling problem that is external to the system.

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IBM-Allee 1, 71139 Ehningen, Germany  
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"Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

### **Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten**

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

### **Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A**

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:  
International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504  
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:  
IBM Deutschland GmbH  
Technical Regulations, Abteilung M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Tel: +49 7032 15 2941  
email: lugi@de.ibm.com

Generelle Informationen:

**Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.**

## Electromagnetic Interference (EMI) Statement - Russia

**ВНИМАНИЕ!** Настоящее изделие относится к классу А.  
В жилых помещениях оно может создавать  
радиопомехи, для снижения которых необходимы  
дополнительные меры

### Class B Notices

The following Class B statements apply to features designated as electromagnetic compatibility (EMC) Class B in the feature installation information.

#### Federal Communications Commission (FCC) statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM-authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. IBM is not responsible for any radio or television interference caused by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Industry Canada Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

## Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## European Community Compliance Statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication equipment.

European Community contact:  
IBM Deutschland GmbH  
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Tele: +49 7032 15 2941  
email: lugi@de.ibm.com

## VCCI Statement - Japan

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

## Japanese Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guideline (products less than or equal to 20 A per phase)

高調波ガイドライン適合品
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**Japanese Electronics and Information Technology Industries Association (JEITA)  
Confirmed Harmonics Guideline with Modifications (products greater than 20 A per  
phase)**

高調波ガイドライン準用品

**IBM Taiwan Contact Information**

台灣IBM 產品服務聯絡方式：  
台灣國際商業機器股份有限公司  
台北市松仁路7號3樓  
電話：0800-016-888

**Electromagnetic Interference (EMI) Statement - Korea**

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**Germany Compliance Statement**

**Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse B EU-Richtlinie zur  
Elektromagnetischen Verträglichkeit**

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse B ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung von IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung von IBM gesteckt/eingebaut werden.

**Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten**

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

**Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von  
Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse B**

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:  
International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504  
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:  
IBM Deutschland GmbH  
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Tel: +49 7032 15 2941  
email: [lugi@de.ibm.com](mailto:lugi@de.ibm.com)

Generelle Informationen:

**Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse B.**

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