BladeCenter JS21 Types 7988 and 8844

Problem Determination and Service Guide

BladeCenter JS21 Types 7988 and 8844

Problem Determination and Service Guide

Note: Before using this information and the product it supports, read the general information in Appendix B, “Notices,” on page 173, and the *Warranty and Support Information* document on the *IBM BladeCenter Documentation* CD.

Sixth Edition (November 2010)

Contents

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الآمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Guidelines for trained service technicians

This section contains information for trained service technicians.

Inspecting for unsafe conditions

Use the information in this section to help you identify potential unsafe conditions in an IBM product that you are working on. Each IBM product, as it was designed and manufactured, has required safety items to protect users and service technicians from injury. The information in this section addresses only those items. Use good judgment to identify potential unsafe conditions that might be caused by non-IBM alterations or attachment of non-IBM features or options that are not addressed in this section. If you identify an unsafe condition, you must determine how serious the hazard is and whether you must correct the problem before you work on the product.

Consider the following conditions and the safety hazards that they present:

- Electrical hazards, especially primary power. Primary voltage on the frame can cause serious or fatal electrical shock.
- Explosive hazards, such as a damaged CRT face or a bulging capacitor.
- Mechanical hazards, such as loose or missing hardware.

To inspect the product for potential unsafe conditions, complete the following steps:

1. Make sure that the power is off and the power cord is disconnected.
2. Make sure that the exterior cover is not damaged, loose, or broken, and observe any sharp edges.
3. Check the power cord:
   - Make sure that the third-wire ground connector is in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and the frame ground.
   - Make sure that the power cord is the correct type, as specified in the documentation for your BladeCenter unit type.
   - Make sure that the insulation is not frayed or worn.
4. Remove the cover.
5. Check for any obvious non-IBM alterations. Use good judgment as to the safety of any non-IBM alterations.
6. Check inside the blade server for any obvious unsafe conditions, such as metal filings, contamination, water or other liquid, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Make sure that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Guidelines for servicing electrical equipment

Observe the following guidelines when servicing electrical equipment:

- Check the area for electrical hazards such as moist floors, nongrounded power extension cords, and missing safety grounds.
- Use only approved tools and test equipment. Some hand tools have handles that are covered with a soft material that does not provide insulation from live electrical current.
- Regularly inspect and maintain your electrical hand tools for safe operational condition. Do not use worn or broken tools or testers.

- Do not touch the reflective surface of a dental mirror to a live electrical circuit. The surface is conductive and can cause personal injury or equipment damage if it touches a live electrical circuit.
- Some rubber floor mats contain small conductive fibers to decrease electrostatic discharge. Do not use this type of mat to protect yourself from electrical shock.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Locate the emergency power-off (EPO) switch, disconnecting switch, or electrical outlet so that you can turn off the power quickly in the event of an electrical accident.
- Disconnect all power before you perform a mechanical inspection, work near power supplies, or remove or install main units.
- Before you work on the equipment, disconnect the power cord. If you cannot disconnect the power cord, have the customer power-off the wall box that supplies power to the equipment and lock the wall box in the off position.
- Never assume that power has been disconnected from a circuit. Check it to make sure that it has been disconnected.
- If you have to work on equipment that has exposed electrical circuits, observe the following precautions:
  - Make sure that another person who is familiar with the power-off controls is near you and is available to turn off the power if necessary.
  - When you are working with powered-on electrical equipment, use only one hand. Keep the other hand in your pocket or behind your back to avoid creating a complete circuit that could cause an electrical shock.
  - When using a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on a suitable rubber mat to insulate you from grounds such as metal floor strips and equipment frames.
- Use extreme care when measuring high voltages.
- To ensure proper grounding of components such as power supplies, pumps, blowers, fans, and motor generators, do not service these components outside of their normal operating locations.
- If an electrical accident occurs, use caution, turn off the power, and send another person to get medical aid.

Safety statements

Important:

Each caution and danger statement in this documentation begins with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the *Safety Information* document.

For example, if a caution statement begins with a number 1, translations for that caution statement appear in the *Safety Information* document under statement 1.

Be sure to read all caution and danger statements in this documentation before performing the instructions. Read any additional safety information that comes with your blade server or optional device before you install the device.

Statement 1:

DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **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 table when installing, moving, or opening covers on this product or attached devices.**

To Connect:	**To Disconnect:**
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

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.

Statement 3:

CAUTION:
When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- **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 controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

Statement 4:

≥ 18 kg (39.7 lb)

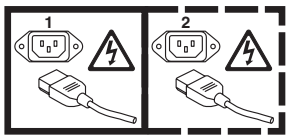
≥ 32 kg (70.5 lb)

≥ 55 kg (121.2 lb)

CAUTION:
Use safe practices when lifting.

Statement 5:

CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



Statement 8:

CAUTION:
Never remove the cover on a power supply or any part that has the following label attached.

Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

Statement 10:

CAUTION:
Do not place any object on top of rack-mounted devices.

Chapter 1. Introduction

This *Problem Determination and Service Guide* contains information to help you solve problems that might occur in your IBM® BladeCenter® JS21 Type 7988 or 8844 blade server. It describes the diagnostic tools that come with the blade server, 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 will be charged for the installation.
- **Tier 2 customer replaceable unit:** You may 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 blade server.
- **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 *Warranty and Support Information* document.

Related documentation

In addition to this document, the following documentation also comes with the blade server:

- *Installation and User's Guide*

  This printed document contains general information about the blade server, including how to install supported options and how to configure the blade server.
- *Safety Information*

  This document is in Portable Document Format (PDF) on the *Documentation* CD. It 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 is in PDF on the *Documentation* CD. It contains information about the terms of the warranty and about service and assistance.

Depending on the blade server model, additional documentation might be included on the *Documentation* CD.

The blade server might have features that are not described in the documentation that comes with the blade server. The documentation might be updated occasionally to include information about those features, or technical updates might be available to provide additional information that is not included in the blade server documentation. The most recent versions of all BladeCenter documentation are at http://www.ibm.com/systems/support/.

In addition to the documentation in this library, be sure to review the *IBM BladeCenter Planning and Installation Guide* for your BladeCenter unit type for information to help you prepare for system installation and configuration. This document is also available at http://www.ibm.com/systems/support/.

Notices and statements in this document

The caution and danger statements that appear in this document are also in the multilingual *Safety Information* document, which is on the *Documentation* CD. Each statement is numbered for reference to the corresponding statement 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 could 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 procedure 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 procedure step or situation.

Features and specifications

The following table is a summary of the features and specifications of the JS21 Types 7988 and 8844 blade servers operating in a non-NEBS/ETSI (a non-Network Equipment Building System/European Telecommunications Standards Institute) environment.

Notes:

- Power, cooling, removable-media drives, external ports, and advanced system management are provided by the BladeCenter unit.
- The operating system in the blade server must provide USB support for the blade server to recognize and use the removable-media drives and front-panel USB ports. The BladeCenter unit uses USB for internal communications with these devices.

Microprocessor:

Support for:

- Two single-core, 64-bit, IBM PowerPC® 970MP microprocessors (2.7 GHz in BladeCenter H unit, 2.6 GHz in other BladeCenter units) or
- Two dual-core, 64-bit, IBM PowerPC 970MP microprocessors (2.5 GHz in BladeCenter H unit, 2.3 GHz in other BladeCenter units)

Memory:

- Dual-channel (DDR2) with 4 DIMM slots
- Supports 512 MB, 1 GB, 2 GB, and 4 GB DIMMs, for a maximum of 16 GB (as of the date of this publication)
- Supports 2-way interleaved, DDR2, PC2-3200 or PC2-4200, ECC SDRAM registered x4 (Chipkill) DIMMs

Drives: Support for two internal small-form-factor Serial Attached SCSI (SAS) drives

Integrated functions:

- Two 1 Gigabit Ethernet controllers
- Expansion card interface
- Intelligent Platform Management Interface (IPMI)
- Baseboard management controller (BMC) with IPMI firmware
- ATI RN50 ES1000 video controller
- SAS RAID controller
- Light path diagnostics
- Local service processor (BMC)
- RS-485 interface for communication with the management module
- Automatic server restart (ASR)
- Serial over LAN (SOL)
- Four Universal Serial Bus (USB) buses for communication with keyboard, diskette drive, and CD drive

Predictive Failure Analysis (PFA) alerts:

- Microprocessor
- Memory

Electrical input: 12 V dc

Environment:

- Air temperature:
  - Blade server on: 10° to 35°C (50° to 95°F). Altitude: 0 to 914 m (3000 ft)
  - Blade server on: 10° to 32°C (50° to 90°F). Altitude: 914 m to 2133 m (3000 ft to 7000 ft)
  - Blade server off: -40° to 60°C (-40° to 140°F)
- Humidity:
  - Blade server on: 8% to 80%
  - Blade server off: 5% to 80%

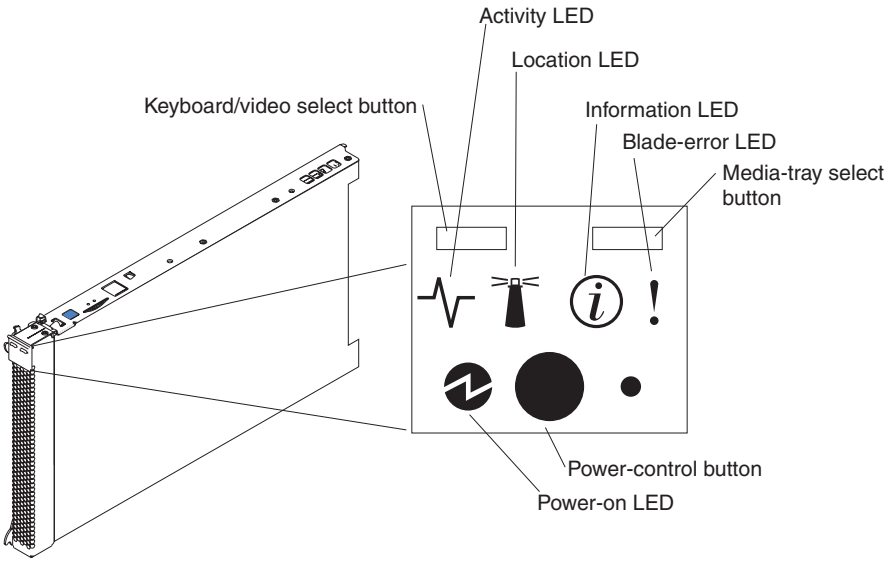
Size:

- Height: 24.5 cm (9.7 inches)
- Depth: 44.6 cm (17.6 inches)
- Width: 2.9 cm (1.14 inches)
- Maximum weight: 5.0 kg (11 lb)

Blade server control panel buttons and LEDs

This section describes the blade server control panel buttons and LEDs.

Note: The control panel door is shown in the closed (normal) position in the following illustration. To access the power-control button, you must open the control panel door.



Keyboard/video select button: When using a supported Linux operating system, press this button to associate the shared BladeCenter unit keyboard and video ports with the blade server.

Notes:

- The use of a mouse or pointing device is not supported by the JS21 blade server.
- The Linux operating system in the blade server must provide USB support for the blade server to recognize and use the keyboard, even if the keyboard has a PS/2-style connector.
- The keyboard and video are available after the Linux operating system loads. Power-on self-test (POST) codes and diagnostics are not supported using the keyboard and video.
- For information about supported Linux operating systems, see http://www.ibm.com/servers/eserver/serverproven/compat/us/.

The LED on this button flashes while the request is being processed, then is lit when the ownership of the keyboard and video has been transferred to the blade server. It can take approximately 20 seconds to switch the keyboard and video control to the blade server.

Using a keyboard that is directly attached to the management module, you can press keyboard keys in the following sequence to switch keyboard and video control between blade servers:

NumLock NumLock *blade_server_number* Enter

Where *blade_server_number* is the two-digit number for the blade bay in which the blade server is installed. When using some keyboards, such as the 28L3644 (37L0888) keyboard, you will need to hold down the Shift key while entering this key sequence.

If there is no response when you press the keyboard/video select button, you can use the management-module Web interface to determine whether local control has been disabled on the blade server.

Activity LED: When this green LED is lit, it indicates that there is activity on the hard disk drive or network.

Location LED: When this blue LED is lit, it has been turned on by the system administrator to aid in visually locating the blade server. The location LED can be turned off through the management-module Web interface or through IBM Director Console.

Information LED: When this amber LED is lit, it indicates that information about a system error for the blade server has been placed in the Management Module Event Log. The information LED can be turned off through the management-module Web interface or through IBM Director Console.

Blade-error LED: When this amber LED is lit, it indicates that a system error has occurred in the blade server. The blade-error LED will turn off only after the error is corrected.

Media-tray select button: Press this button to associate the shared BladeCenter unit media tray (removable-media drives and front-panel USB ports) with the blade server. The LED on the button flashes while the request is being processed, then is lit when the ownership of the media tray has been transferred to the blade server. It can take approximately 20 seconds for the operating system in the blade server to recognize the media tray.

If there is no response when you press the media-tray select button, you can use the management-module Web interface to determine whether local control has been disabled on the blade server.

Note: The operating system in the blade server must provide USB support for the blade server to recognize and use the removable-media drives and USB ports.

Power-control button: This button is behind the control panel door. Press this button to turn on or turn off the blade server.

Note: The power-control button has effect only if local power control is enabled for the blade server. Local power control is enabled and disabled through the management-module Web interface.

Power-on LED: This green LED indicates the power status of the blade server in the following manner:

- Flashing rapidly: The service processor (BMC) on the blade server is communicating with the management module.
- Flashing slowly: The blade server has power but is not turned on.
- Lit continuously: The blade server has power and is turned on.

Turning on the blade server

After you connect the blade server to power through the BladeCenter unit, the blade server can start in any of the following ways:

- You can press the power-control button on the front of the blade server (behind the control panel door, see “Blade server control panel buttons and LEDs” on page 4) to start the blade server.

  Notes:

  1. Wait until the power-on LED on the blade server flashes slowly before pressing the blade server power-control button. If the power-on LED is flashing rapidly, the service processor in the management module is initializing; therefore, the power-control button on the blade server does not respond.
  2. While the blade server is starting, the power-on LED on the front of the blade server is lit. See “Blade server control panel buttons and LEDs” on page 4 for the power-on LED states.

- If a power failure occurs, the BladeCenter unit and then the blade server can start automatically when power is restored (if the blade server is configured through the management module to do so).
- You can turn on the blade server remotely by using the management module.
- If the blade server is connected to power (the power-on LED is flashing slowly), the operating system supports the Wake on LAN feature, and the Wake on LAN feature has not been disabled through the management module, the Wake on LAN feature can turn on the blade server. However, the blade server can only receive the Wake on LAN command through the ethernet ports that are integrated into the system board, not through the ethernet ports on an installed I/O expansion card.

Turning off the blade server

When you turn off the blade server, it is still connected to power through the BladeCenter unit. The blade server can respond to requests from the service processor, such as a remote request to turn on the blade server. To remove all power from the blade server, you must remove it from the BladeCenter unit.

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

The blade server can be turned off in any of the following ways:

- You can press the power-control button on the blade server (behind the control panel door, see “Blade server control panel buttons and LEDs” on page 4). This also starts an orderly shutdown of the operating system, if this feature is supported by the operating system.

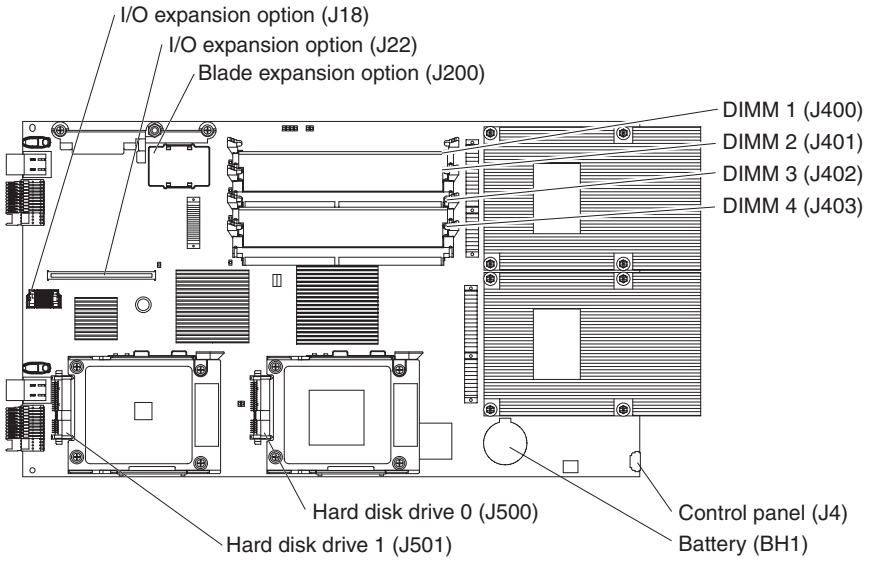
  Note: After turning off the blade server, wait at least 5 seconds before you press the power-control button to turn on the blade server again.
- If the operating system stops functioning, you can press and hold the power-control button for more than 4 seconds to turn off the blade server.
- The management module can turn off the blade server.

System-board layouts

The following illustrations show the connectors, jumpers, and LEDs on the system board. The illustrations in this document might differ slightly from your hardware.

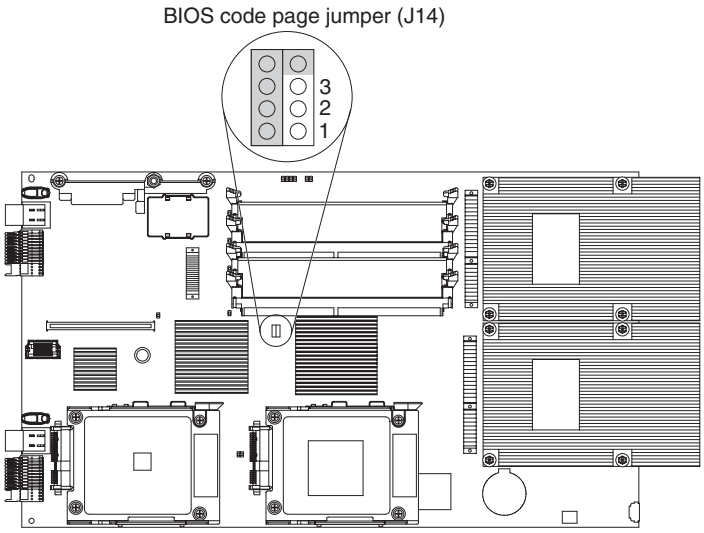
System-board connectors

The following illustration shows the connectors on the system board.



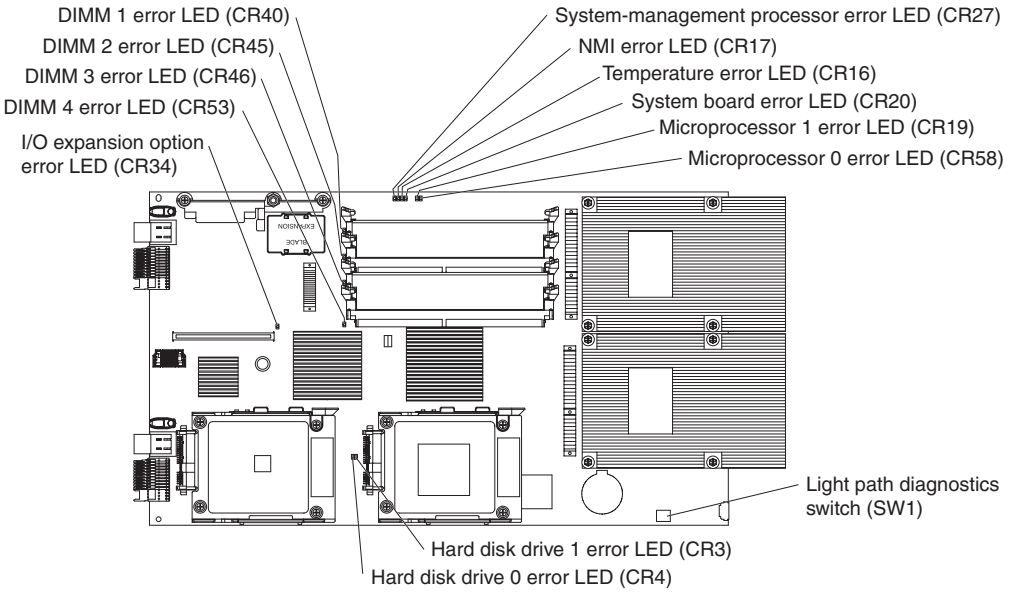
System-board jumpers

The following illustration shows the jumpers on the system board.



System-board LEDs

The following illustration shows the LEDs on the system board. You have to remove the blade server from the BladeCenter unit, open the cover, and press the light path diagnostics switch to light any error LEDs that were turned on during processing.



Chapter 2. Diagnostics

This chapter describes the diagnostic tools that are available to help you solve problems that might occur in the blade server.

If you cannot locate and correct the problem using the information in this chapter, see Appendix A, “Getting help and technical assistance,” on page 171 for more information.

Diagnostic tools

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

- **POST checkpoints**

  The power-on self-test (POST) in the firmware generates eight-digit checkpoint codes. If the firmware detects a problem during POST, an eight-digit error code will be displayed. See “POST checkpoint codes” for more information.
- **Troubleshooting tables**

  These tables list problem symptoms and actions to correct the problems. See “Troubleshooting tables” on page 113 for more information.
- **Light path diagnostics**

  Use the light path diagnostics to diagnose system errors quickly. See “Light path diagnostics” on page 124 for more information.

POST checkpoint codes

When you turn on the blade server, it performs a series of tests to check the operation of the blade server components. This series of tests is called the power-on self-test, or POST. During POST, a series of eight-digit progress codes (also known as checkpoints) is displayed on the console to indicate that the blade server is initializing system resources.

Note: You must establish an SOL session with the blade server to view the codes described in this section; the shared BladeCenter unit video cannot display these codes.

If the POST is completed without detecting any problems, the firmware displays a checkpoint indicating that an operating system is being loaded. Location code information may also display on the operator panel during this time (see “Location codes” on page 66).

If POST detects a problem, an eight-digit error code will be displayed and logged in the BladeCenter management module event log. See “Attention codes” on page 34 and “Error codes” on page 37 for more information. A location code might be displayed at the same time on the second line (see “Location codes” on page 66).

Note: Some POST codes may not display on the operator panel, these codes can be viewed using the Progress Indicator History option in the SMS utility (see “Using the SMS utility” on page 166).

Progress codes enable users and service personnel to know what the system is doing as it initializes. These codes are not intended to be error indicators, but in some cases a system could hang at one of the progress codes without displaying an eight-digit error code. Any actions associated with the progress codes should be taken only if the system hangs.

Progress codes

The following table lists the progress codes that may be displayed by the POST, and the suggested actions to take if the system hangs on the progress code.

In the following progress codes, *X* can be any number or letter.

Notes:

1. For checkpoints with no associated location code, see “Light path diagnostics” on page 124 to identify the failing component.
2. For checkpoints with location codes, see “Location codes” on page 66.
3. For problems persisting after completing the suggested actions, see “Checkout procedure” on page 106 and “Solving undetermined problems” on page 135.
4. For eight-digit codes not listed here, see “Checkout procedure” on page 106.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, “Parts listing, Types 7988 and 8844,” on page 137 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.**

Progress code	Description	Action
C2001000	Partition auto-startup during a platform startup	1. Go to “Recovering the system firmware” on page 127. 2. Replace the system-board and chassis assembly.
C2001010	Startup source	1. Go to “Recovering the system firmware” on page 127. 2. Replace the system-board and chassis assembly.
C2001100	Adding partition resources to the secondary configuration	1. Go to “Recovering the system firmware” on page 127. 2. Replace the system-board and chassis assembly.
C20011FF	Partition resources added successfully	1. Go to “Recovering the system firmware” on page 127. 2. Replace the system-board and chassis assembly.
C2001200	Checking if startup is allowed	1. Go to “Recovering the system firmware” on page 127. 2. Replace the system-board and chassis assembly.
C20012FF	Partition startup is allowed to proceed	1. Go to “Recovering the system firmware” on page 127. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C2001300	Initializing ISL roadmap	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20013FF	ISL roadmap initialized successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2001400	Initializing SP Communication Area #1	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2001410	Initializing startup parameters	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20014FF	Startup parameters initialized successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002100	Power on racks	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002110	Issuing a power on command	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C200211F	Power on command successful	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20021FF	Power on phase complete	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002200	Begin acquiring slot locks	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C20022FF	End acquiring slot locks	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002300	Begin acquiring VIO slot locks	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20023FF	End acquiring VIO slot locks	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002400	Begin powering on slots	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002450	Waiting for power on of slots to complete	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20024FF	End powering on slots	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2002500	Begin power on VIO slots	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20025FF	End powering on VIO slots	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2003100	Validating ISL command parameters	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2003111	Waiting for bus object to become operational	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C2003112	Waiting for bus unit to become disabled	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2003115	Waiting for creation of bus object	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2003150	Sending ISL command to bus unit	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20031FF	Waiting for ISL command completion	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20032FF	ISL command complete successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2003300	Start SoftPOR of a failed ISL slot	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2003350	Waiting for SoftPOR of a failed ISL slot	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20033FF	Finish SoftPOR of a failed ISL slot	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2004100	Waiting for load source device to enlist	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2004200	Load source device has enlisted	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C2004300	Preparing connection to load source device	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20043FF	Load source device is connected	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006000	Locating first LID information on the load source	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006005	Clearing all partition main store	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006010	Locating next LID information on the load source	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006020	Verifying LID information	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006030	Priming LP configuration LID	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006040	Preparing to initiate LID load from load source	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006050	LP configuration LID primed successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006060	Waiting for LID load to complete	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C2006100	LID load completed successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2006200	Loading raw kernel memory image	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20062FF	Loading raw kernel memory image completed successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008040	Begin transfer slot locks to partition	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008060	End transfer slot locks to partition	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008080	Begin transfer VIO slot locks to partition	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20080A0	End transfer VIO slot locks to partition	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20080FF	Hypervisor low-level session manager object is ready	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008100	Initializing service processor communication area #2	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008104	Loading data structures into main store	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C2008110	Initializing event paths	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008120	Starting processor(s)	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008130	Begin associate of system ports	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008138	Associating system ports to the partition	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C200813F	End associate of system ports	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20081FF	Processors started successfully, now waiting to receive the continue acknowledgement from system firmware	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C2008200	Continue acknowledgement received from system firmware	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C20082FF	VSP startup complete successfully	1. Go to "Recovering the system firmware" on page 127. 2. Replace the system-board and chassis assembly.
C400E200	U4 I2C Master interface Initialization	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E201	Flash RAM CRC checksum is valid	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E202	MPIC initialization	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C400E203	Disabling TB	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E204	CRC check of the image in RAM	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E206	Checking KCS interface for good communication with BMC	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E209	SIO/COM1/GPIO initialization	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E20A	Loading 256K flash code into L2 cache	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E20C	Finish Platform Hardware Probing. Process Firmware LID directory	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E20F	Executing from L2 cache	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E211	CRC check of the image in flash RAM	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E212	Getting CPU status and presence	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E213	Memory initialization	1. Verify that DIMMs are correctly installed and seated, then restart server. 2. Start server from PERM image and recover TEMP image. 3. Replace the system-board and chassis assembly.
C400E214	Pattern 1 memory test	1. Verify that DIMMs are correctly installed and seated, then restart server. 2. Start server from PERM image and recover TEMP image. 3. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C400E215	Pattern 2 memory test	1. Verify that DIMMs are correctly installed and seated, then restart server. 2. Start server from PERM image and recover TEMP image. 3. Replace the system-board and chassis assembly.
C400E216	Clear memory	1. Verify that DIMMs are correctly installed and seated, then restart server. 2. Start server from PERM image and recover TEMP image. 3. Replace the system-board and chassis assembly.
C400E217	Initialize LLFW global data structure	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E218	Copying the set of flash RAM to memory	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E219	Saving the DIMM SPDs and the CPU status and presence	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E21A	Executing code from memory	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E21B	Load PFW into memory	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E21C	Executing HT initialization	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E21D	Executing PCI initialization	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E21E	Execute I/O APIC test	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E220	Read 4K system VPD eeprom Data	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
C400E22A	Temp-side flash image is corrupted	1. Force the blade server to boot from the PERM image and reject the TEMP image. 2. Replace the system-board and chassis assembly.
C400E22B	Perm-side flash image is corrupted	1. Force the blade server to boot from the TEMP image and commit the TEMP image. 2. Replace the system-board and chassis assembly.
C400E230	Read an LID entry from the LID directory	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E231	Check CRC of a PHYPL LID	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E232	Decompress a PHYPL LID image into its final memory location	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E23E	Checking a PHYPL LID size	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E23F	Searching for a PHYPL LID	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
C400E298	Transfer control to PHYPL following MSD start up	1. Shutdown and restart the blade server. 2. Replace the system-board and chassis assembly.
C400E299	Transfer control to PHYPL following cold start up	1. Shutdown and restart the blade server from the permanent-side image. 2. Replace the system-board and chassis assembly.
C700 xxxx	A problem has occurred with the system firmware during startup.	1. Shutdown and restart the blade server from the permanent-side image. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
CA000000	Process control now owned by partition firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA000020	Checking firmware levels	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000030	Attempting to establish a communication link by using lpevents	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000032	Attempting to register lpevent queues	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000034	Attempting to exchange cap and allocate lpevents	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000038	Attempting to exchange virtual continue lpevents	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000040	Attempting to obtain RTAS firmware details	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000050	Attempting to load RTAS firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000060	Attempting to obtain open firmware details	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000070	Attempting to load open firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000080	Preparing to start open firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000090	Open firmware package corrupted (phase 1)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA000091	Attempting to load the second pass of C code	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA0000A0	Open firmware package corrupted (phase 2)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D001	PCI probe process completed, create PCI bridge interrupt routing properties	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D002	PCI adapter NVRAM hint created; system is rebooting	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D003	PCI probing complete	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D004	Beginning of install-console, loading GUI package	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D008	Initialize console and flush queues	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D00C	The partition firmware is about to search for an NVRAM script	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D00D	Evaluating NVRAM script	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D010	First pass open firmware initialization complete; establish parameters for restart	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D011	First pass open firmware initialization complete; control returned to initialization firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D012	Second pass open firmware initialization complete; control returned to initialization firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00D013	Run-time open firmware initialization complete; control returned to initialization firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E101	Create RTAS node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E102	Load and initialize RTAS	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E105	Transfer control to operating system (normal mode boot)	Go to "Boot problem resolution" on page 112.
CA00E10A	Load RTAS device tree	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E10B	Set RTAS device properties	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E110	Create KDUMP properties	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E130	Build device tree	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E131	Create root node properties	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E134	Create memory node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E135	Create HCA node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E136	Create BSR node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E137	Create HEA node	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E138	Create options node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E139	Create aliases node and system aliases	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E13A	Create packages node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E13B	Create HEA node	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E13C	Create HEA port node	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E140	Loading operating system	Go to "Boot problem resolution" on page 112.
CA00E141	Synchronizing the operating system bootlist to the management module bootlist.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E142	The management module bootlist is being set from the operating system bootlist.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E143	The operating system bootlist is being set from the management module bootlist.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E149	Create boot manager node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E14C	Create terminal emulator node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E14D	Load boot image	Go to "Boot problem resolution" on page 112.
CA00E150	Create host (primary) node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E151	Probing PCI bus	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E152	Probing for adapter FCODE; evaluate if present	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E153	End adapter FCODE probing and evaluation	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E154	Create PCI bridge node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E155	Probing PCI bridge secondary bus	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E156	Create plug-in PCI bridge node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E15B	Transfer control to operating system (service mode boot)	Go to "Boot problem resolution" on page 112.
CA00E15F	Adapter VPD evaluation	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E170	Start of PCI bus probe	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E172	First pass of PCI device probe	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E174	Establishing host connection	1. Make sure that: • The bootp server is correctly configured; then, retry the operation. • The network connections are correct; then, retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.
CA00E175	Bootp request	1. Make sure that: • The bootp server is correctly configured; then, retry the operation. • The network connections are correct; then, retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.
CA00E176	TFTP file transfer	1. Make sure that: • The bootp server is correctly configured; then, retry the operation. • The network connections are correct; then, retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E177	Transfer failure due to TFTP error condition	1. Make sure that: • The bootp server is correctly configured; then, retry the operation. • The network connections are correct; then, retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.
CA00E178	Initiating TFTP file transfer	1. Make sure that: • The bootp server is correctly configured, then retry the operation. • The network connections are correct, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with the bootp server or network, replace the system board and chassis assembly.
CA00E179	Closing BOOTP	1. Make sure that: • The bootp server is correctly configured, then retry the operation. • The network connections are correct, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with the bootp server or network, replace the system board and chassis assembly.
CA00E17B	Microprocessor clock speed measurement	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E198	The system is rebooting to enact changes specified in ibm,client-architecture-support	1. Make sure that: • The bootp server is correctly configured, then retry the operation. • The network connections are correct, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with the bootp server or network, replace the system board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E199	The system is rebooting to enact changes that were specified in the boot image ELF header	1. Make sure that: • The bootp server is correctly configured; then, retry the operation. • The network connections are correct; then, retry the operation. 2. Go to "Checkout procedure" on page 106. 3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.
CA00E19A	NVRAM auto-boot? variable not found - assume FALSE	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E19B	NVRAM menu? variable not found - assume FALSE	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E19D	Create NVRAM node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A0	User requested boot to SMS menus using keyboard entry	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A1	User requested boot to open firmware prompt using keyboard entry	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A2	User requested boot using default service mode boot list using keyboard entry	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A3	User requested boot using customized service mode boot list using keyboard entry	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A4	User requested boot to SMS menus	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A5	User requested boot to open firmware prompt	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1A6	User requested boot using default service mode boot list	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E1A7	User requested boot using customized service mode boot list	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1AA	System boot check for NVRAM settings	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1AB	System booting using default service mode boot list	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1AC	System booting using customized service mode boot list	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1AD	System booting to the operating system	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1AE	System booted to SMS multiboot menu using NVRAM settings	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1AF	System booted to SMS utilities menu using NVRAM settings	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1B1	System booting system-directed boot-device repair	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1B2	XOFF received, waiting for XON	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1B3	XON received	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1B4	System-directed boot-string did not load an operating system repair	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1B5	Checking for iSCSI disk aliases	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1D0	Create PCI SCSI node	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E1D3	Create SCSI block device node (SD)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1D4	Create SCSI byte device node (ST)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1DC	Dynamic console selection	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1DD	A graphics adapter has been selected as the firmware console, but the USB keyboard is not attached.	1. Make sure that there is a USB keyboard attached to a USB port that is assigned to the partition. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
CA00E1F0	Start out-of-box experience	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F1	Start self test sequence on one or more devices	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F2	Power on password prompt	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F3	Privileged-access password prompt	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F4	End self-test sequence on one or more boot devices; begin system management services	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F5	Build boot device list	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F6	Determine boot device sequence	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F7	No boot image located	Go to "Boot problem resolution" on page 112.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E1F8	Building boot device list for SCSI adapters. (The location code of the SCSI adapter being scanned is also displayed.)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1F9	Building boot device list for fibre-channel adapters. (The location code of the SAN adapter being scanned is also displayed.)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1FA	Building device list for SCSI adapters (The device ID and device LUN of the device being scanned is also displayed.)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1FB	Scan SCSI bus for attached devices	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1FC	Building boot device list for SSA adapters. (The location code of the SSA adapter being scanned is also displayed.)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1FE	Building device list for fibre-channel (SAN) adapters. (The WWPN of the SAN adapter being scanned is also displayed.)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E1FF	Building device list for fibre-channel (SAN) adapters. (The LUN of the SAN adapter being scanned is also displayed.)	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E440	Validate NVRAM, initialize partitions as needed	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E441	Generate /options node NVRAM configuration variable properties	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E442	Validate NVRAM partitions	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E443	Generate NVRAM configuration variable dictionary words	1. Check for server firmware updates; then, install the updates if available and retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E444	The NVRAM size is less than 8K bytes	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E701	Create memory VPD	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E800	Initialize RTAS	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E810	Initializing ioconfig pfds	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E820	Initializing lpevent	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E830	Initializing event scan	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E840	Initializing hot plug	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E843	Initializing interface/aix access	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E850	Initializing dynamic reconfiguration	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E860	Initializing sensors	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E865	Initializing VPD	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E870	Initializing pfds memory manager	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA00E875	Initializing rtas_last_error	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E876	Initializing rtas_error_inject	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E877	Initializing dump interface	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E879	Initialize platform-assisted KDUMP interface	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA00E885	Initializing set-power-level	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E886	Initializing exit2c	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E887	Initialize gdata for activate_firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E890	Starting to initialize open firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00E891	Finished initializing open firmware	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA00EAA1	Probe PCI-PCI bridge bus	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
CA060203	An alias was modified or created	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **If the system hangs on a progress code, follow the suggested actions in the order in which they are listed in the Action column until the problem is resolved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Progress code	Description	Action
CA26FFFF	An extended waiting time was required for lpevent to finish	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA26ttss	Waiting for lpevent of type *tt* and subtype *ss*.	1. Restart the blade server. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
CA279001	The firmware image contains a firmware module that is not already on the server.	1. Look for a BA27xxxx error in the error logs to see if a firmware installation error occurred. Resolve any problems that are found and retry the firmware installation. 2. Retry the firmware installation with another firmware image. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
CA2799FD	A firmware update module is being read.	Shut down the blade server; then, restart it using the permanent boot image and reject the temporary image.
CA2799FF	A firmware update module is being written.	Shut down the blade server; then, restart it using the permanent boot image and reject the temporary image.

Attention codes

The following table describes the partitioning firmware attention codes that may be displayed if POST detects a problem and suggested actions to correct the problem.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Attention code	Description	Action
AA00E1A8	The system is booting to the open firmware prompt.	At the open firmware prompt, type `dev /packages/gui obe` and press Enter; then, type `1` to select **SMS Menu**.
AA00E1A9	The system is booting to the System Management Services (SMS) menus.	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 blade server.
AA00E1B0	Waiting for the user to select the language and keyboard. The menu should be visible on the console.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
AA00E1B1	Waiting for the user to accept or decline the license agreement. The user must accept the license agreement.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
AA060007	A keyboard was not found.	Make sure that a keyboard is attached to the USB port that is assigned to the partition.
AA06000B	The system or partition was not able to find an operating system on any of the devices in the boot list.	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 blade server. 2. If the problem remains, go to "Boot problem resolution" on page 112.
AA06000C	The media in a device in the boot list was not bootable.	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" on page 112.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Attention code	Description	Action
AA06000D	The media in the device in the bootlist was not found under the I/O adapter specified by the bootlist.	1. Make sure 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" on page 112.
AA06000E	The adapter specified in the boot list is not present or is not functioning.	• For an AIX operating system: 1. Try booting the blade 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 blade server using the *Standalone Diagnostics* CD or a NIM server; then, run diagnostics against the failing adapter. • For a Linux operating system, boot the blade server using the *Standalone Diagnostics* CD or a NIM server; then, run diagnostics against the failing adapter.
AA060010	The FAT file system on the boot disk is configured in a way that might cause a boot failure.	Increase the FAT partition size by 10% to keep the number of data clusters fewer than approximately 4080.
AA060011	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.	Make sure that: • The boot disk belongs to the partition from which you are trying to boot. • The boot list in the SMS menus is correct.
AA100001	There was a communication failure between partition firmware and the hypervisor. The event that was expected from the hypervisor was not received.	1. Look at the error logs for errors that occurred around the time that this attention code was logged. Resolve those errors, then reboot the blade server. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
AA100002	There was a communication failure between partition firmware and the hypervisor.	1. Look at the error logs for errors that occurred around the time that this attention code was logged. Resolve those errors, then reboot the blade server. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
AA130013	Bootable media is missing from a USB CD-ROM	Make sure that a bootable CD is properly inserted in the CD or DVD drive and retry the boot operation.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Attention code	Description	Action
AA130014	The media in a USB CD-ROM has been changed.	1. Retry the operation. 2. Check for server firmware updates; then, install the updates if available and retry the operation.
AA170210	Setenv/$setenv parameter error - the name contains a null character.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
AA170211	Setenv/$setenv parameter error - the value contains a null character.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
AA190001	The hypervisor function to get/set the time-of-day clock reported an error.	1. Use the operating system to set the system clock. 2. Check for server firmware updates; then, install the updates if available.
AA260001	The system is waiting for the machine type, model, and serial number to be entered.	Enter the machine type, model, and serial number of the blade server at the prompt.
BA00E820	lpevent communication failure	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA00E830	ibm,event-scan init failure	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

Error codes

The following table describes the error codes that may be displayed if POST detects a problem and suggested actions to correct the problem.

Note: For problems persisting after completing the suggested actions, see “Checkout procedure” on page 106 and “Solving undetermined problems” on page 135.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, “Parts listing, Types 7988 and 8844,” on page 137 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.**

Error code	Description	Action
A200yyyy	See the description for B200yyyy error code with same yyyy value.	Perform the action described in B200yyyy error code with same yyyy value.
A7003000	A user-initiated platform dump occurred.	No service action required.
A700yyyy	See the description for B700yyyy error code with same yyyy value.	Perform the action in B700yyyy error code with same yyyy value.
B2001150	During the startup of a partition, a partitioning configuration problem occurred.	Go to “Verifying the partition configuration” on page 108.
B2001230	During the startup of a partition, a partitioning configuration problem occurred; the partition is lacking the necessary resources to start up.	Go to “Verifying the partition configuration” on page 108.
B2001266	The partition could not start up; you are attempting to start up an operating system that is not supported.	Install a supported operating system and restart the partition.
B2002250	During the startup of a partition, an attempt to toggle the power state of a slot has failed.	Check for server firmware updates; then, install the updates if available.
B2002300	During the startup of a partition, an attempt to toggle the power state of a slot has failed.	Check for server firmware updates; then, install the updates if available.
B2002310	During the startup of a partition, the partition firmware attempted an operation that failed.	Go to “Firmware problem isolation” on page 127.
B2002320	During the startup of a partition, the partition firmware attempted an operation that failed.	Go to “Firmware problem isolation” on page 127.
B2002425	During the startup of a partition, the partition firmware attempted an operation that failed.	Go to “Firmware problem isolation” on page 127.
B2002426	During the startup of a partition, the partition firmware attempted an operation that failed.	Go to “Firmware problem isolation” on page 127.
B2002475	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.	Check for server firmware updates; then, install the updates if available.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B2002485	During the startup of a partition, the partition firmware attempted an operation that failed.	Go to "Firmware problem isolation" on page 127.
B2003081	During the startup of a partition, the startup did not complete due to a copy error.	Check for server firmware updates; then, install the updates if available.
B2003125	During the startup of a partition, the blade server firmware could not obtain a segment of main storage within the blade server to use for managing the creation of a partition.	Check for server firmware updates; then, install the updates if available.
B2006006	During the startup of a partition, a system firmware error occurred when the partition memory was being initialized; the startup will not continue.	Go to "Firmware problem isolation" on page 127.
B2006012	During the startup of a partition, the partition LID failed to completely load into the partition main storage area.	Go to "Firmware problem isolation" on page 127.
B2006027	During the startup of a partition, a failure occurred when allocating memory for an internal object used for firmware module load operations.	1. Make sure that enough main storage was allocated to the partition. 2. Retry the operation.
B200690A	During the startup of a partition, an error occurred while copying open firmware into the partition load area.	Go to "Firmware problem isolation" on page 127.
B2008080	System log entry only.	No service action required.
B2008081	During the startup of a partition, an internal firmware time-out occurred; the partition may continue to start up but it may experience problems while running.	Check for server firmware updates; then, install the updates if available.
B2008105	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.	Check for server firmware updates; then, install the updates if available.
B2008107	During the startup of a partition, there was a problem getting a segment of main storage in the blade server main storage.	Check for server firmware updates; then, install the updates if available.
B2008109	During the startup of a partition, a failure occurred; the startup will not continue.	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.
B2008112	During the startup of a partition, a failure occurred; the startup will not continue.	Check for server firmware updates; then, install the updates if available.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B2008113	During the startup of a partition, an error occurred while mapping memory for the partition startup.	Check for server firmware updates; then, install the updates if available.
B2008114	During the startup of a partition, there was a failure verifying the VPD for the partition resources during startup.	Check for server firmware updates; then, install the updates if available.
B2008115	During the startup of a partition, there was a low level partition-to-partition communication failure.	Check for server firmware updates; then, install the updates if available.
B2008117	During the startup of a partition, the partition did not start up due to a system firmware error.	Check for server firmware updates; then, install the updates if available.
B2008121	During the startup of a partition, the partition did not start up due to a system firmware error.	Go to "Firmware problem isolation" on page 127.
B2008123	During the startup of a partition, the partition did not start up due to a system firmware error.	Go to "Firmware problem isolation" on page 127.
B2008125	During the startup of a partition, the partition did not start up due to a system firmware error.	Go to "Firmware problem isolation" on page 127.
B2008127	During the startup of a partition, the partition did not start up due to a system firmware error.	Go to "Firmware problem isolation" on page 127.
B2008129	During the startup of a partition, the partition did not start up due to a system firmware error.	Go to "Firmware problem isolation" on page 127.
B200A100 B200A101	A partition ended abnormally; the partition could not stay running and shut itself down.	1. Check the error logs and take the actions for the error codes that are found. 2. Go to "Firmware problem isolation" on page 127.
B200B07B	System log entry only.	No service action required.
B200C1F0	An internal system firmware error occurred during a partition shutdown or a restart.	Go to "Firmware problem isolation" on page 127.
B200D150	A partition ended abnormally; there was a communications problem between this partition and the code that handles resource allocation.	Check for server firmware updates; then, install the updates if available.
B200F003	During the startup of a partition, the partition processor(s) did not start the firmware within the time-out window.	Collect the partition dump information; then, go to "Firmware problem isolation" on page 127.
B200F004 B200F005	A partition had a communications problem during a shutdown of the partition.	Collect the partition dump information; then, go to "Firmware problem isolation" on page 127.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B200F006	During the startup of a partition, the code load operation for the partition startup timed out.	1. Check the error logs and take the actions for the error codes that are found. 2. Go to "Firmware problem isolation" on page 127.
B200F007	During a shutdown of the partition, a time-out occurred while trying to stop a partition	Check for server firmware updates; then, install the updates if available.
B400BAD0 00000000	No DIMMs detected	1. Reseat the DIMMs and restart the blade server. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
B400BAD0 0000XXYY	DIMM failure where: • XX is: 01=DIMM4 missing; 02=DIMM2 unsupported and DIMM4 missing; 04=DIMM2 failed and DIMM4 missing; 10=DIMM2 missing; 12=DIMM2 unsupported; 14=DIMM2 failed; 20=DIMM2 missing and DIMM4 unsupported; 21=DIMM4 unsupported; 22=DIMM2 and DIMM4 unsupported; 24=DIMM2 failed and DIMM4 unsupported; 40=DIMM2 missing and DIMM4 failed; 41=DIMM4 failed; 42=DIMM2 unsupported and DIMM4 failed; 44=DIMM2 and DIMM4 failed; 88=DIMM2 and DIMM4 mismatch • YY is: 01=DIMM3 missing; 02=DIMM1 unsupported and DIMM3 missing; 04=DIMM1 failed and DIMM3 missing; 10=DIMM1 missing; 12=DIMM1 unsupported; 14=DIMM1 failed; 20=DIMM1 missing and DIMM3 unsupported; 21=DIMM3 unsupported; 22=DIMM1 and DIMM3 unsupported; 24=DIMM1 failed and DIMM3 unsupported; 40=DIMM1 missing and DIMM3 failed; 41=DIMM3 failed; 42=DIMM1 unsupported and DIMM3 failed; 44=DIMM1 and DIMM3 failed; 88=DIMM1 and DIMM3 mismatch)	1. Reseat the DIMMs and restart the blade server. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B400BAD1 83A00702 (x)	TEMP side firmware image corruption was detected (blade server will automatically restart using the PERM side image after 4 minutes).	1. Go to "Recovering the system firmware" on page 127. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
B400BAD1 XXXXXXXX (>)	PHYPL LID *XXXXXXXX* exceeds its maximum size. where *XXXXXXXX* is: 83A00702, 80A00701, or 80A00711	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
B400BAD1 XXXXXXXX (-)	PHYPL LID *XXXXXXXX* is not found. where *XXXXXXXX* is: 83A00702, 80A00701, or 80A00711	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
B400BAD1 XXXXXXXX (x)	PHYPL LID *XXXXXXXX* CRC mismatches. where *XXXXXXXX* is: 80A00701 or 80A00711	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
B400BADC 2B200X31	Processor x is faulty	Replace the system-board and chassis assembly.
B400BADD 25C10002	Memory DIMM is not supported	1. Make sure that: • All DIMMs are supported; replace all unsupported DIMMs and restart the blade server • All DIMMs are installed in pairs; install DIMMs properly and restart the blade server. 2. Replace the following components one at a time, in the order shown, restarting the blade server each time: a. Each DIMM, until the failing DIMM is isolated b. System-board and chassis assembly.
B400BADD 25C10001	Memory DIMM error	1. Reseat the DIMMs and restart the blade server. 2. Replace the following components one at a time, in the order shown, restarting the blade server each time: a. DIMM specified by the location code b. Companion DIMM of the DIMM specified by the location code c. System-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B400BADD 25C10003	Companion (in the pair) of the memory DIMM specified by the location code is unmatched	1. Reseat all DIMMs and restart the blade server. 2. Replace the following components one at a time, in the order shown, restarting the blade server each time: a. DIMM specified by the location code b. Companion DIMM of the DIMM specified by the location code c. System-board and chassis assembly.
B400BADD 25C10004	Companion (in the pair) of the memory DIMM specified by the location code is missing, failing, or unsupported	1. Reseat all DIMMs and restart the blade server. 2. Replace the following components one at a time, in the order shown, restarting the blade server each time: a. DIMM specified by the location code b. Companion DIMM of the DIMM specified by the location code c. System-board and chassis assembly.
B7000102	System firmware detected an error. A machine check occurred during startup.	Collect the error log information; then, go to "Firmware problem isolation" on page 127.
B7000103	System firmware detected a failure	Collect the error log and platform dump information; then, go to "Firmware problem isolation" on page 127.
B7000104	System firmware failure. Machine check, undefined error occurred.	Check for server firmware updates; then, install the updates if available.
B7000105	System firmware detected an error. More than one request to terminate the system was issued.	Go to "Firmware problem isolation" on page 127.
B7000106	System firmware failure.	Collect the error log and platform dump information; then, go to "Firmware problem isolation" on page 127.
B7000107	System firmware failure. The system detected an unrecoverable machine check condition.	Collect the error log and platform dump information; then, go to "Firmware problem isolation" on page 127.
B70001F5	A processor failure has occurred.	Replace the blade server.
B70001F6	A memory failure has occurred	Replace the DIMM specified by the location code that is reported with the error code.
B7000302	System firmware failure	Collect the platform dump information; then, go to "Firmware problem isolation" on page 127.
B7000441	Service processor failure. The platform encountered an error early in the startup or termination process.	Replace the blade server.
B7000443	Service processor failure.	Replace the blade server.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B7000601	Informational system log entry.	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	System firmware detected an error condition.	Collect the error log information; then, go to "Firmware problem isolation" on page 127.
B7000611	There is a problem with the system hardware clock; the clock time is invalid.	Use the operating system to set the system clock.
B7000621	Informational system log entry only.	No corrective action is required.
B7000631	The hardware real-time clock has detected that the battery is low.	Replace the system battery.
B7000650	System firmware detected an error. Resource management was unable to allocate main storage. A platform dump was initiated.	Collect the error log, platform dump, and partition configuration information; then, go to "Firmware problem isolation" on page 127.
B7004400	There is a platform dump to collect	Use the method provided by your operating system to collect the platform dump information; then, go to "Firmware problem isolation" on page 127.
B7004401	System firmware failure. The system firmware detected an internal problem.	Go to "Firmware problem isolation" on page 127.
B7004407	Informational only: system firmware has deleted a platform dump.	No corrective action is required.
B7004408	A platform dump has occurred. (The system issues this error code during the first startup after a dump is requested.)	Collect the platform dump information; then, go to "Firmware problem isolation" on page 127.
B7004409	A platform dump has occurred. A previous attempt to startup failed; the dump from the previous B7004408 error code has been lost.	Collect the platform dump information; then, go to "Firmware problem isolation" on page 127.
B7005190	Operating system error. The server firmware detected a problem in an operating system.	Check for error codes in the partition that is reporting the error and take the appropriate actions for those error codes.
B7005191	System firmware detected a virtual I/O configuration error.	1. Use the partition manager to verify or reconfigure the invalid virtual I/O configuration. 2. Check for server firmware updates; then, install the updates if available.
B7005300	System firmware detected a failure while partitioning resources. The platform partitioning code encountered an error.	Check the management module event log and the SMS progress indicator history for error codes; then, take the actions associated with those error codes.
B7005301	User intervention required. The system detected a problem with the partition configuration.	Use the partition manager to reallocate the system resources.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
B7005401	The system encountered a correctable memory failure.	Replace the DIMM specified by the location code that is reported with the error code.
B7005402 through B7005406	A correctable processor failure occurred.	Replace the blade server.
B7005601	System firmware failure. There was a problem initializing, reading, or using system location codes.	Go to "Firmware problem isolation" on page 127.
B7005700	The system firmware has experienced a low storage condition.	At your earliest convenience, use the method provided by your operating system to force a platform dump; then, go to "Firmware problem isolation" on page 127.
B7006951	An error occurred because a partition needed more NVRAM than was available.	Use the partition manager to delete one or more partitions.
B700BAD1	The platform firmware detected an error.	Go to "Firmware problem isolation" on page 127.
B700F103	System firmware failure	Collect the error log and platform dump information; then, go to "Firmware problem isolation" on page 127.
B700F104	Operating system error. System firmware terminated a partition.	Check the management module event log and the SMS progress indicator history for partition firmware error codes (especially BA00F104); then, take the appropriate actions for those error codes.
B700F105	System firmware detected an internal error	Collect the error log and platform dump information; then, go to "Firmware problem isolation" on page 127.
BA000010	The device data structure is corrupted	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000020	The firmware levels are incompatible.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA000031	lpevent communication failure	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA000030	An lpevent communication failure occurred	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000032	The firmware failed to register the lpevent queues	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000034	The firmware failed to exchange capacity and allocate lpevents	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000038	The firmware failed to exchange virtual continuation lpevents	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000040	The firmware was unable to obtain the RTAS code lid details	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000050	The firmware was unable to load the RTAS code lid	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000060	The firmware was unable to obtain the open firmware code lid details	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000070	The firmware was unable to load the open firmware code lid	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA000080	The user did not accept the firmware license agreement.	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA000081	Failed to get the firmware license policy.	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA000082	Failed to set the firmware license policy.	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA000091	Unable to load the second-pass C code	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA00E840	PCI hot-plug init failure	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA00E843	Initialization of the rtas-call interface failed.	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA00E850	There was a failure when initializing dynamic reconfiguration.	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA00E860	There was a failure when initializing the sensors.	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA010000	There is insufficient information to boot the systems	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA010001	The client IP address is already in use by another network device	Make sure that all of the IP addresses on the network are unique; then, retry the operation.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA010002	Cannot get gateway IP address	Perform the actions for progress code CA00E174 (see "Progress codes" on page 10).
BA010003	Cannot get server hardware address	Perform the actions for progress code CA00E174 (see "Progress codes" on page 10
BA010004	Bootp failed	Perform the actions for progress code CA00E174 (see "Progress codes" on page 10
BA010005	File transmission (TFTP) failed	Perform the actions for progress code CA00E174 (see "Progress codes" on page 10
BA010006	The boot image is too large	Start up from another device with a bootable image.
BA010010	There was a partition firmware error while in the SMS menus	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA010011	SET-ROOT-PROP could not find / (root) package	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA012010	Opening the TCP node failed.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA012011	TCP failed to read from the network.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA012012	TCP failed to write to the network.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA012013	Closing TCP failed.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA017020	Failed to open the TFTP package	Verify that the TFTP parameters are correct.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA017021	Failed to load the TFTP file	Verify that the TFTP server and network connections are correct.
BA01B010	Opening the BOOTP node failed.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA01B011	BOOTP failed to read from the network	Refer to the actions for checkpoint CA00E174.
BA01B012	BOOTP failed to write to the network	Refer to the actions for checkpoint CA00E174.
BA01B013	The discover mode is invalid	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA01B014	Closing the BOOTP node failed	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA01B015	The BOOTP discover server timed out.	Refer to the actions for checkpoint CA00E174.
BA01D001	Opening the DHCP node failed	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA01D020	DHCP failed to read from the network	1. Verify that the network cable is connected, and that the network is active. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA01D030	DHCP failed to write to the network	1. Verify that the network cable is connected, and that the network is active. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA01D040	The DHCP discover server timed out	1. Insure that the DHCP server has addresses available. 2. Insure that the DHCP server's configuration file is not overly constrained such that it was not able to meet the configuration requested by the client. 3. Refer to the actions for checkpoint CA00E174.
BA01D050	DHCP::discover no good offer	DHCP discover did not receive any DHCP offers from the server(s) the meet the clients's requirements. Insure that the DHCP server's configuration file is not overly constrained such that it was not able to meet the configuration requested by the client.
BA01D051	DHCP::discover DHCP request timed out	1. DHCP discover did receive a DHCP offer from the server(s) the meet the clients's requirements, but the server did not send DHCP ack (the acknowledgement) to the client's DHCP request. It is possible that another client was using the address that was served. 2. Insure that the DHCP server has addresses available.
BA01D052	DHCP::discover: 10 incabable servers were found	Ten DHCP servers have sent DHCP offers, none of which met the requirements on the client. Check the configuration that the client is requesting, and the server's DHCP configuration files, for compatibility.
BA01D053	DHCP::discover received a reply, but without a message type	Insure that the DHCP server is properly configured.
BA01D054	DHCP::discover: DHCP nak received	1. DHCP discover did receive a DHCP offer from the server(s) the meet the clients's requirements, but the server did sent DHCP nak (not acknowledged) to the client's DHCP request. (It is possible that another client was using the address that was served.) This usually occurs 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 can also occur when the pool of addresses is not truly divided. The DHCP server's configuration file should also be set to "authoritative". 2. Insure that the DHCP server is functioning properly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA01D055	DHCP::discover: DHCP decline	1. DHCP discover did receive a DHCP offer from the server(s) the meet the clients's requirements, but the client performed an ARP test on the address and found that another client was using the address. DHCP decline was sent to the server, but no additional DHCP offers were received by the client. The client still does not have a valid address. 2. Insure that the DHCP server is functioning properly.
BA01D056	DHCP::discover: unknown DHCP message	DHCP discover received an unknown DHCP message type. Insure that the DHCP server is functioning properly.
BA01D0FF	Closing the DHCP node failed.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA04000F	Self test failed on device; no error or location code information available	1. If a location code is displayed with the error, replace the device specified by the location code. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA040010	Self test failed on device; can't locate package	1. If a location code is displayed with the error, replace the device specified by the location code. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA040020	The machine type and model are not recognized by the blade server firwmare	1. Check for server firmware updates; then, install the updates if available. 2. Replace the system-board and chassis assembly.
BA040030	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	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA040035	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.	Make sure that the machine type, model, and serial number are correct for this server. If this is a new server, check for server firmware updates; then, install the updates if available.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA040040	Setting the machine type, model, and serial number failed.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA040050	The h-call to switch off the boot watchdog timer failed.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA040060	Setting the firmware boot side for the next boot failed.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA050001	Failed to reboot a partition in logical partition mode	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA050004	Failed to locate service processor device tree node.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA05000A	Failed to send boot failed message	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA060003	IP parameter requires 3 period characters "."	Enter a valid IP parameter using the format: *XXX.XXX.XXX.XXX*, where *X* is any digit 0 - 255.
BA060004	Invalid IP parameter	Enter a valid IP parameter using the format: *XXX.XXX.XXX.XXX*, where *X* is any digit 0 - 255.
BA060005	Invalid IP parameter (>255)	Enter a valid IP parameter using the format: *XXX.XXX.XXX.XXX*, where *X* is any digit 0 - 255.
BA060008	No configurable adapters found by the Remote IPL menu in the SMS utilities	This error occurs when the firmware cannot locate any LAN adapters that are supported by the remote IPL function. Make sure that the devices in the remote IPL device list are correct using the SMS menus.
BA06000B	The system was not able to find an operating system on the devices in the boot list.	Go to "Boot problem resolution" on page 112.
BA06000C	A pointer to the operating system was found in non-volatile storage.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA060020	The environment variable "boot-device" exceeded the allowed character limit.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA060021	The environment variable "boot-device" contained more than five entries.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA060022	The environment variable "boot-device" contained an entry that exceeded 255 characters in length	1. Using the SMS menus, set the boot list to the default boot list. Shut down; then, start up the blade server. Use SMS menus to customize the boot list as required. 2. If the problem remains, go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA060030	Logical partitioning with shared processors is enabled and the operating system does not support it.	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. Go to "Checkout procedure" on page 106. 4. Replace the system-board and chassis assembly.
BA060040	The partition is configured with large pages but the operating system does not support large pages.	Boot a version of the operating system that supports large pages.
BA060060	The operating system expects an IOSP partition, but it failed to make the transition to alpha mode.	1. Make sure that • The alpha-mode operating system image is intended for this partition. • The configuration of the partition supports an alpha-mode operating system. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA060061	The operating system expects a non-IOSP partition, but it failed to make the transition to MGC mode.	1. Make sure that • The non-alpha-mode operating system image is intended for this partition. • The configuration of the partition supports a non-alpha-mode operating system. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA060070	The operating system does not support the server's processors.	Boot a version of the operating system that supports the server's processors.
BA060071	An invalid number of vectors was received from the operating system	Boot a newer version of the operating system

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA060072	client-arch-support software error	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA060075	client-arch-support firmware error	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA060200	Failed to set the operating system's boot list from the management module boot list.	1. Verify that the boot list is set up in the MM. 2. Check for server firmware and MM firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA060201	Failed to read the "boot path" value in the VPD	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA060202	Failed to read the "boot path" value in the VPD with the new value.	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA07xxxx	SCSI controller failure	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA090001	SCSI DASD: test unit ready failed; hardware error	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA090002	SCSI DASD: test unit ready failed; sense data available	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA090003	SCSI DASD: send diagnostic failed; sense data available	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA090004	SCSI DASD: send diagnostic failed: devofl cmd	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA09000A	There was a vendor specification error.	1. Check the vendor specification for additional information. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA09000B	Generic SCSI sense error	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA09000C	The media is write-protected	1. Change the setting of the media to allow writing, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA09000D	The media is unsupported or not recognized.	1. Insert new media of the correct type, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA09000E	The media is not formatted correctly.	1. Insert new media with the correct format, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA09000F	Media is not present	1. Insert new media, then retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA090010	The request sense command failed.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA090011	The retry limit has been exceeded.	1. Verify that the SCSI cables and devices are properly 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA090012	There is a SCSI device that is not supported.	1. Replace the SCSI device that is not supported with supported device. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA120001	On an undetermined SCSI device, test unit ready failed; hardware error	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA120002	On an undetermined SCSI device, test unit ready failed; sense data available	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA120003	On an undetermined SCSI device, send diagnostic failed; sense data available	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA120004	On an undetermined SCSI device, send diagnostic failed; devofl command	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA120010	Failed to generate the SAS device's physical location code. The error log entry has the details.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA130001	SCSI CD-ROM test unit ready failed; hardware error.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA130002	SCSI CD-ROM test unit ready failed; sense data available.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA130003	SCSI CD-ROM send diagnostic failed; sense data available.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA130004	SCSI CD-ROM send diagnostic failed: devofl command.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA130010	USB CD-ROM in the media tray: device remained busy longer than the time-out period	1. Retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA130011	USB CD-ROM in the media tray: execution of ATA/ATAPI command was not completed with the allowed time.	1. Retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA130012	USB CD-ROM in the media tray: execution of ATA/ATAPI command failed.	1. Remove the CD or DVD in the drive and replace it with a known-good disk. 2. Go to "Checkout procedure" on page 106. 3. Replace the USB CD or DVD drive. 4. Replace the system-board and chassis assembly.
BA130013	USB CD-ROM in the media tray: bootable media is missing from the drive	1. Insert a bootable CD in the drive and retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the USB CD or DVD drive. 4. Replace the system-board and chassis assembly.
BA130014	USB CD-ROM in the media tray: the media in the USB CD-ROM drive has been changed.	1. Retry the operation. 2. Go to "Checkout procedure" on page 106. 3. Replace the USB CD or DVD drive. 4. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA130015	USB CD-ROM in the media tray: ATA/ATAPI packet command execution failed.	1. Retry the operation. 2. Remove the CD or DVD in the drive and replace it with a known-good disk. 3. Go to "Checkout procedure" on page 106. 4. Replace the USB CD or DVD drive. 5. Replace the system-board and chassis assembly.
BA131010	The USB keyboard has been removed.	1. Reseat the keyboard cable in the management module USB port. 2. Check for server firmware updates; then, install the updates if available.
BA140001	The SCSI read/write optical test unit ready failed; hardware error.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA140002	The SCSI read/write optical test unit ready failed; sense data available.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA140003	The SCSI read/write optical send diagnostic failed; sense data available.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA140004	The SCSI read/write optical send diagnostic failed; devofl command.	1. Verify that the SCSI cables and devices are properly plugged; correct any problems that are found. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA150001	PCI Ethernet BNC/RJ-45 or PCI Ethernet AUI/RJ-45 adapter: internal wrap test failure	Replace the adapter specified by the location code.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA150070	The receive operation failed.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA151001	10/100 Mbps Ethernet PCI adapter: internal wrap test failure	Replace the adapter specified by the location code.
BA151002	10/100 Mbps Ethernet card failure	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA153002	Gigabit Ethernet adapter failure	Make sure that the MAC address programmed in the FLASH/EEPROM is correct.
BA153003	Gigabit Ethernet adapter failure	1. Check for server firmware updates; then, install the updates if available. 2. Replace the Gigabit Ethernet adapter.
BA154010	HEA software error	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA154020	The required open firmware property was not found.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA154030	Invalid parameters were passed to the HEA device driver.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA154040	The TFTP package open failed	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA154050	The transmit operation failed.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA154060	Failed to initialize the HEA port or queue	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA170000	NVRAMRC initialization failed; device test failed	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA170100	NVRAM data validation check failed	1. Shut down the blade server; then, restart it. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA170201	The firmware was unable to expand target partition - saving configuration variable	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA170202	The firmware was unable to expand target partition - writing error log entry	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA170203	The firmware was unable to expand target partition - writing VPD data	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA170210	Setenv/$Setenv parameter error - name contains a null character	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA170211	Setenv/$Setenv parameter error - value contains a null character	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA170220	Unable to write a variable value to NVRAM due to lack of free memory in NVRAM.	1. Reduce the number of partitions, if possible, to add more memory in NVRAM to this partition. 2. Go to the checkout procedure on page xx. 3. Replace the system board and chassis assembly.
BA170221	Setenv/$setenv had to delete stored firmware network boot settings to free memory in NVRAM.	The user may need to reenter adapter and network parameters for network boot or installation.
BA170998	NVRAMRC script evaluation error - command line execution error.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA180014	MSI software error.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA180020	No response was received from a slot during PCI probing.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA180099	PCI probe error; bridge in freeze state, slot in reset state	1. Check for adapter firmware updates; apply if available. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA180100	The FDDI adapter Fcode driver is not supported on this server. IBM may produce a compatible driver in the future, but does not guarantee one.	
BA188000	There is an unsupported adapter in the PCI slot	Remove the adapter.
BA188001	EEH recoved a failing I/O adapter	Replace the adapter.
BA188002	EEH was not able to recover the failing I/O apdater.	Replace the adapter.
BA180008	PCI device Fcode evaluation error	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA180009	The Fcode on a PCI adapter left a data stack imbalance	1. Check for adapter firmware updates; then, install the updates if available. 2. Check for server firmware updates; then, install the updates if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system-board and chassis assembly.
BA180010	PCI probe error, bridge in freeze state	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA180011	PCI bridge probe error, bridge is not usable	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA180012	PCI device runtime error, bridge in freeze state	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA180101	Stack underflow from fibre-channel adapter	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA190001	Firmware function to get/set time-of-day reported an error	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA201001	The serial interface dropped data packets	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA201002	The serial interface failed to open	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA201003	The firmware failed to handshake properly with the serial interface	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA210000	Partition firmware reports a default catch	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA210001	Partition firmware reports a stack underflow was caught	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA210002	Partition firmware was ready before standout was ready	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA210003	A data storage error was caught by partition firmware	1. If the location code reported with the error points to an adapter, check for adapter firmware updates; apply if available. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA210013	There was a partition firmware error while in the SMS menus	1. Look for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA210020	I/O configuration exceeded the maximum size allowed by partition firmware.	1. Increase the logical memory block size to 256 MB and restart the blade server. 2. Go to "Checkout procedure" on page 106. 3. Replace the system-board and chassis assembly.
BA210100	An error may not have been sent to the management module event log.	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA210101	The partition firmware error log queue is full	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
.BA220010	There was a partition firmware error during USB hotpug probing. USB hotplug may not work correctly on this partition.	1. Check the error logs for EEH-related entries; resolve any entries that are found, then reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA220010	There was a partition firmware error during USB hotpug probing. USB hotplug may not work correctly on this partition.	1. Check the error logs for EEH-related entries; resolve any entries that are found, then reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA220020	There was a CRQ registration error; the partner vslot is not valid.	Verify that this client virtual slot device has a valid server virtual slot device in a hosting partition.
BA278001	Failed to flash firmware: invalid image file	Download a new firmware update image and retry the update.
BA278002	Flash file is not designed for this platform	Download a new firmware update image and retry the update.
BA278003	Unable to lock the firmware update lid manager	1. Restart the blade server. 2. Make sure that the operating system is authorized to update the firmware. If the system is running multiple partitions, make sure that this partition has service authority.
BA278004	An invalid firmware update lid was requested	Download a new firmware update image and retry the update.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA278005	Failed to flash a firmware update lid	Download a new firmware update image and retry the update.
BA278006	Unable to unlock the firmware update lid manager	Restart the blade server.
BA278007	Failed to reboot the system after a firmware flash update	Restart the blade server.
BA278009	The operating system tools to update the blade server firmware are incompatible with this system.	Go to the IBM microcode download web site (http://techsupport.services.ibm.com/server/lopdiags) and download the latest version of the service aids package for Linux.
BA27800A	A server firmware update failed due to a hardware error.	1. Check the error logs for hardware-related entries; resolve any entries that are found, then reboot the blade server and retry the server firmware update. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly. 4.
BA280000	RTAS discovered an invalid operation that may cause a hardware error	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA290000	RTAS discovered an internal stack overflow	1. Go to "Checkout procedure" on page 106. 2. Replace the system-board and chassis assembly.
BA290001	RTAS low memory corruption was detected	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA290002	RTAS low memory corruption was detected	1. Reboot the blade server. 2. Look for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA310010	Unable to obtain the SRC history	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA310020	An invalid SRC history was obtained.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA310030	Writing the MAC address to the VPD failed.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA330000	Memory allocation error.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA330001	Memory allocation error.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA330002	Memory allocation error.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA330003	Memory allocation error.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.
BA330004	Memory allocation error.	1. Reboot the blade server. 2. Check for server firmware updates; apply if available. 3. Go to "Checkout procedure" on page 106. 4. Replace the system board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Error code	Description	Action
BA400001	Informational message: DMA trace buffer full.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly.
BA400002	Informational message: DMA map-out size mismatch.	1. Check for server firmware updates; apply if available. 2. Go to "Checkout procedure" on page 106. 3. Replace the system board and chassis assembly. 4.

Location codes

Location codes are displayed with some error codes to identify the component that caused the error.

Note: Location codes do not indicate the location of the blade server within the BladeCenter unit, they only identify components of the blade server.

Location code	Component
Um-E1	Battery
Um-P1-C1	DIMM 1
Um-P1-C2	DIMM 2
Um-P1-C3	DIMM 3
Um-P1-C4	DIMM 4
Um-P1-C5	I/O expansion adapter
Um-P1 Um-P1-T1 Um-P1-T2 Um-P1-T3 Um-P1-T4 Um-P1-T5 Um-P1-T6 Um-P1-T7 Um-P1-T8 Um-P1-T9 Um-P1-T10 Um-P1-T11 Um-P1-T12	System-board and chassis assembly
Um-P1-T10-L0-L0	SAS hard disk drive 1
Um-P1-T11-L0-L0	SAS hard disk drive 2
Un-Y1	Firmware version
Um = Uffff.001.sssssss (where: ffff = Enclosure feature code, sssssss = serial number) Un = Utttt.mmm.sssssss (where: tttt = machine type, mmm = model number, sssssss = serial number)	Um is for enclosure locations Un is for system VPD and Firmware

Error logs

Any errors that are detected by the POST are sent to the BladeCenter management module event log (see the *BladeCenter Management Module User's Guide* for information about the event log). Depending on your operating system and the utilities you have installed, error messages might also be stored in an operating system log (see the documentation that comes with the operating system for more information).

Service request numbers

Service request numbers (SRNs) are error codes that contain a hyphen. The codes have three digits before the hyphen, and three or four digits after the hyphen. SRNs can be viewed using the AIX diagnostics or 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 following Web site: http://techsupport.services.ibm.com/server/lopdiags.

Using the SRN tables

The SRN list is in numerical sequence. The failing function codes (FFCs) are provided to aid in locating a failing component (see “Failing function codes” on page 104).

Notes:

1. If the SRN does not appear in the table, see “Solving undetermined problems” on page 135.
2. After replacing a component, verify the replacement part and perform a log-repair action using the AIX diagnostics.

SRN tables

This section lists SRNs 101-711 through 2D02 (AIX) and A00-(x)xxx through A1D-50x.

SRNs 101-711 through 2D02

Replace the parts in the order that the FFCs are listed.

Note: An *x* in the following SRNs represents any digit or character.

SRN	FFC	Description and action
101-711 to 101-726	xxx	The system hung while trying to configure an unknown resource. Action: Run the standalone diagnostics problem determination procedure. If the problem remains, refer to “Failing function codes” on page 104 to find the FFC that matches the last three digits of the SRN. Suspect the device adapter or device itself. **Note:** xxx corresponds to the last three digits of the SRN.
101-888	210 227	The system does not IPL. Action: System checkout or undetermined problem procedure.
101-2020		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.
101-2021		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.
101-xxxx	xxxx	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.
103-151	151	The time-of-day battery failed. Action: go to battery replacement procedure
109-200		The system crashed while being run by the customer. Action: Use general checkout procedure, problem determination procedure and get a new SRN.

SRN	FFC	Description and action
110-101		The diagnostics did not detect an installed resource. Action: If this SRN appeared when running concurrent diagnostics, then run concurrent diagnostics using the diag -a command.
110-921 to 110-926	812 xxx	The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN. Action: Go to general checkout or problem resolution.
110-935	812	The system halted while diagnostics were executing. Action: Use the problem determination procedure.
110-xxxx	xxxx 221	The system halted while diagnostics were executing. **Note:** xxxx corresponds to the last three or four digits of the SRN following the dash (-). If your 110 SRN is not listed, substitute the last three or four digits of the SRN for xxxx, then proceed to the FFC table using the substituted digits as your FFC. Action: Run standalone diagnostics, problem determination procedure for AIX and Linux. If you still get the same SRN, refer to “Failing function codes” on page 104 to find the FFC that matches the last three digits of the SRN.
111-107		A machine check occurred. Action: Go to “Performing the checkout procedure” on page 106.
111-108		An encoded SRN was displayed. Action: Go to “Performing the checkout procedure” on page 106.
111-121		There is a display problem. Action: Go to “Performing the checkout procedure” on page 106.
111-78C	227	PCI adapter I/O bus problem. Action: Go to “Performing the checkout procedure” on page 106. Perform “Solving undetermined problems” on page 135.
111-999	210	System does not perform a soft reset. Action: Go to “Performing the checkout procedure” on page 106.
252B-101	252B	Adapter configuration error. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-710	252B	Permanent adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-711	252B	Adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-712	252B	Adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRN	FFC	Description and action
252B-713	252B	Adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-714	252B	Temporary adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-715	252B	Temporary adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-716	252B 293	PCI bus error detected by EEH. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-717	252B 293	PCI bus error detected by adapter. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-718	252B 293	Temporary PCI bus error detected by adapter. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-719	252B	Device bus termination power lost or not detected. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-720	252B	Adapter detected device bus failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRN	FFC	Description and action
252B-721	252B	Temporary adapter detected device bus failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-722	252B	Device bus interface problem. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
252B-723	252B	Device bus interface problem. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-201	256D 221	Adapter configuration error. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-601	256D	Error log analysis indicates adapter. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-602	256D	Error log analysis indicates an error attention condition. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-603	256D	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 or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-604	256D 210	Error Log Analysis indicates a permanent adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRN	FFC	Description and action
256D-605	256D	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 or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-606	256D	Error Log Analysis indicates adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-701	256D 221	Error Log Analysis indicates permanent adapter failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
256D-702	256D 221	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 or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
650-xxx	650	Disk drive configuration failed.
651-xxx		The CEC reported a non-critical error. Action: Schedule deferred maintenance. Refer to the problem determination procedure for this system, with the 8-digit error and location codes, for the necessary repair action. If the 8-digit error and location codes were NOT reported, then run AIX diagnostics in problem determination procedure and record and report the 8-digit error and location codes for this SRN.
651-140	221	Display Character test failed. **Note:** Diagnostic will provide this SRN but there is no action to be taken. Do not perform operator panel test from diagnostics.
651-150	166 2E0	Sensor indicates a fan has failed. Action: Go to “Performing the checkout procedure” on page 106.
651-151	152 2E2	Sensor indicates a voltage is outside the normal range. Go to “Performing the checkout procedure” on page 106.
651-152	2E1	Sensor indicates an abnormally high internal temperature. Action: Make sure that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed.
651-153	152 E19	Sensor indicates a power supply has failed. Action: Go to “Performing the checkout procedure” on page 106.
651-159	210	Sensor indicates a FRU has failed. Action: use the failing function codes, use the physical location code(s) from the diagnostic problem report screen to determine the FRUs.

SRN	FFC	Description and action
651-161	2E2	Sensor indicates a voltage is outside the normal range. Action: Go to “Performing the checkout procedure” on page 106.
651-162	2E1	Sensor indicates an abnormally high internal temperature. Action: Make sure that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. There are no fan or blower failures in the BladeCenter unit. If the problem remains, check the management module event log for possible causes of overheating.
651-163	E19	Sensor indicates a power supply has failed. Action: Contact your support person.
651-169		Sensor indicates a FRU has failed. Action: Contact your support person.
651-170		Sensor status not available. Action: Contact your support person.
651-171		Sensor status not available Action: Contact your support person.
651-600		Uncorrectable memory or unsupported memory. Action: Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory modules.
651-601		Missing or bad memory. Action: If the installed memory matches the reported memory size, then replace the memory; otherwise, add the missing memory.
651-602	2C7	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-603	2C6 2C7	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-605	2C6	Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code.
651-608	D01	Bad L2 cache.
651-609	D01	Missing L2 cache.
651-610	210	CPU internal error.
651-611	210	CPU internal cache controller error.
651-612	D01	External cache ECC single-bit error.
651-613	D01	External cache ECC single-bit error.
651-614	214	System bus time-out error.
651-615	292	Time-out error waiting for I/O.
651-619		Error log analysis indicates an error detected by the CPU. Action: Use failing function codes and the physical location codes from the diagnostic problem report screen to determine the FRUs.
651-621	2C6	ECC correctable error Action: Go to “Performing the checkout procedure” on page 106.
651-623	2C6	Correctable error threshold exceeded Action: Go to “Performing the checkout procedure” on page 106.
651-624	214	Memory control subsystem internal error.
651-625	214	Memory address error (invalid address or access attempt).
651-626	214	Memory data error (bad data going to memory).
651-627	214	System bus time-out error.
651-628	210	System bus protocol/transfer error.
651-629	210	Error log analysis indicates an error detected by the memory controller. Action: Go to “Performing the checkout procedure” on page 106.

SRN	FFC	Description and action
651-632	308	Internal device error.
651-639	210	Error log analysis indicates an error detected by the I/O. Action: Use the problem determination procedure and failing function codes, use the physical location codes from the diagnostic problem report screen to determine the FRUs.
651-640	2D5	I/O general bus error.
651-641	2D6	Secondary I/O general bus error.
651-642	2D3	Internal service processor memory error.
651-643	2D3	Internal service processor firmware error.
651-644	2D3	Other internal service processor hardware error.
651-659	2CD	ECC correctable error. Action: Go to “Performing the checkout procedure” on page 106.
651-65A	2CE	ECC correctable error. Action: Go to “Performing the checkout procedure” on page 106.
651-65B	2CC	ECC correctable error. Action: Go to “Performing the checkout procedure” on page 106.
651-664	302	Correctable error threshold exceeded. Action: Go to “Performing the checkout procedure” on page 106.
651-665	303	Correctable error threshold exceeded. Action: Go to “Performing the checkout procedure” on page 106.
651-666	304	Correctable error threshold exceeded. Action: Go to “Performing the checkout procedure” on page 106.
651-669	2CD	Correctable error threshold exceeded. Action: Go to “Performing the checkout procedure” on page 106.
651-66A	2CE	Correctable error threshold exceeded. Action: Go to “Performing the checkout procedure” on page 106.
651-66B	2CC	Correctable error threshold exceeded. Action: Go to “Performing the checkout procedure” on page 106.
651-674	302	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-675	303	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-676	304	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-679	2CD	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-67A	2CE	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-67B	2CC	Failed memory module. Action: Go to “Performing the checkout procedure” on page 106.
651-685	303	Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Go to “Performing the checkout procedure” on page 106.
651-686	304	Memory module has no matched pair. Action: The most probable failure is the memory module paired with the memory module identified by the location code. Go to “Performing the checkout procedure” on page 106.
651-710	214 2C4	System bus parity error.

SRN	FFC	Description and action
651-711	210 2C4	System bus parity error.
651-712	214	System bus parity error.
651-713	214	System bus protocol/transfer error.
651-714	2C4	System bus protocol/transfer error.
651-715	2C4	System bus protocol/transfer error.
651-720	2C7 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-721	2C6 2C7 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-722	2C4	System bus parity error.
651-723	2C4	System bus protocol/transfer error.
651-724	292	I/O host bridge time-out error.
651-725	292	I/O host bridge address/data parity error.
651-726	Software	I/O host bridge timeout caused by software. Action: This error is caused by a software or operating system attempt to access an invalid memory address. Contact software support for assistance.
651-731	2C8	Intermediate or system bus address parity error.
651-732	2C8	Intermediate or system bus data parity error.
651-733	2C8	Intermediate or system bus address parity error.
651-734	292	Intermediate or system bus data parity error.
651-735	292	Intermediate or system bus time-out error.
651-736	292	Intermediate or system bus time-out error.
651-740	2D3	**Note:** Ensure that the system IPLROS and service processor are at the latest firmware level before removing any parts from the system.
651-741	2D3	Service processor error accessing special registers.
651-742	2D3	Service processor reports unknown communication error.
651-743	2D5	Service processor error accessing Vital Product Data EEPROM.
651-745	2D9	Service processor error accessing power controller.
651-746	2D4	Service processor error accessing fan sensor.
651-747	2D5	Service processor error accessing thermal sensor.
651-748	2E2	Service processor error accessing voltage sensor.
651-750	2D4	Service processor detected NVRAM error.
651-751	2D4	Service processor error accessing real-time clock/time-of-day clock.
651-752	2D4	Service processor error accessing JTAG/COP controller/hardware.
651-753	151 2D4	Service processor detects loss of voltage from the time-of-day clock backup battery.
651-770	292	Intermediate or system bus address parity error.
651-771	292	Intermediate or system bus data parity error.
651-772	292	Intermediate or system bus time-out error.
651-773	227	Intermediate or system bus data parity error.

SRN	FFC	Description and action
651-780	2C7 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-781	2C7 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-784	302 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-785	303 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-786	304 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-789	2CD 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-78A	2CE 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-78B	2CC 214	Uncorrectable memory error. Action: Go to “Performing the checkout procedure” on page 106.
651-809		Power fault warning due to unspecified cause. Action: Go to “Performing the checkout procedure” on page 106.
651-810	2E2	Over-voltage condition was detected. Action: Shut the system down and do the following before replacing any FRUs: 1. Visually inspect the power cables and reseat the connectors. 2. Run the following command diag -Avd sysplanar0. When the Resource Repair Action menu displays, select sysplanar0.
651-811	2E2	Under voltage condition was detected Action: Shut the system down and do the following before replacing any FRUs. 1. Visually inspect the power cables and reseat the connectors. 2. Run the following command diag -Avd sysplanar0. When the Resource Repair Action menu displays, select sysplanar0.
651-813		System shutdown due to loss of ac power to the site. Action: System resumed normal operation, no action required.
651-818		Power fault due to manual activation of power-off request. Action: Resume normal operation.
651-820	2E1	An over-temperature condition was detected. Action: 1. Make sure that: • The room ambient temperature is within the system operating environment • There is unrestricted air flow around the system 2. Replace the system-board and chassis assembly.
651-821	2E1	System shutdown due to an over maximum temperature condition being reached. Action: 1. Make sure that: • The room ambient temperature is within the system operating environment • There is unrestricted air flow around the system 2. Replace the system-board and chassis assembly.
651-822	2E1	System shutdown due to over temperature condition and fan failure. Use the physical FRU location(s) as the probable cause(s). Action: Use the physical location codes to replace the FRUs that are identified on the diagnostics problem report screen.
651-831	2E2	Sensor detected a voltage outside of the normal range. Action: Go to “Performing the checkout procedure” on page 106.

SRN	FFC	Description and action
651-832	G2E1	Sensor detected an abnormally high internal temperature. Action: Make sure that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. There are no fan failures.
651-841	152 2E2	Sensor detected a voltage outside of the normal range. Go to “Performing the checkout procedure” on page 106.
651-842	2E1	Sensor detected an abnormally high internal temperature. Action: Make sure that: 1. The room ambient temperature is within the system operating environment. 2. There is unrestricted air flow around the system. 3. All system covers are closed. 4. There are no fan failures.
651-90x		Platform-specific error. Action: Call your support center.
652-600		A non-critical error has been detected: uncorrectable memory or unsupported memory. Action: Schedule deferred maintenance. Examine the memory modules and determine if they are supported types. If the modules are supported, then replace the appropriate memory modules.
652-610	210	A non-critical error has been detected: CPU internal error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-611	210	A non-critical error has been detected: CPU internal cache or cache controller error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-612	D01	A non-critical error has been detected: external cache parity or multi-bit ECC error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-613	D01	A non-critical error has been detected: external cache ECC single-bit error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-623	2C6	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-630	307	A non-critical error has been detected: I/O expansion bus parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-631	307	A non-critical error has been detected: I/O expansion bus time-out error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-632	307	A non-critical error has been detected: I/O expansion bus connection failure. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-633	307	A non-critical error has been detected: I/O expansion unit not in an operating state. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-634	307	A non-critical error has been detected: internal device error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-664	302	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-665	303	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.

SRN	FFC	Description and action
652-666	304	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-669	2CD	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred G maintenance. Go to “Performing the checkout procedure” on page 106.
652-66A	2CE	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-66B	2CC	A non-critical error has been detected: correctable error threshold exceeded. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-731	2C8	A non-critical error has been detected: intermediate or system bus address parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-732	2C8	A non-critical error has been detected: intermediate or system bus data parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-733	2C8 292	A non-critical error has been detected: intermediate or system bus address parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-734	2C8 292	A non-critical error has been detected: intermediate or system bus data parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-735	2D2 292	A non-critical error has been detected: intermediate or system bus time-out error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-736	2D2 292	A non-critical error has been detected: intermediate or system bus time-out error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-770	2C8 292	A non-critical error has been detected: intermediate system bus address parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-771	2C8 292	A non-critical error has been detected: intermediate or system bus data parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-772	2D2 292	A non-critical error has been detected: intermediate or system bus time-out error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-773	227	A non-critical error has been detected: intermediate or system bus data parity error. Action: Schedule deferred maintenance. Go to “Performing the checkout procedure” on page 106.
652-88x		The CEC or SPCN reported a non-critical error. Action: Schedule deferred maintenance. Refer to the entry MAP in this system unit's system service guide, with the 8-digit error and location codes, for the necessary repair action. If the 8-digit error and location codes were NOT reported, then run diagnostics in problem determination mode and record and report the 8-digit error and location codes for this SRN.
652-89x		The CEC or SPCN reported a non-critical error. Action: Schedule deferred maintenance. Refer to the entry MAP in this system unit's system service guide, with the 8-digit error and location codes, for the necessary repair action. If the 8-digit error and location codes were NOT reported, then run diagnostics in problem determination mode and record and report the 8-digit error and location codes for this SRN.

SRN	FFC	Description and action
814-112	814	The NVRAM test failed.
814-113	221	The VPD test failed.
814-114	814	I/O Card NVRAM test failed.
815-100	815	The floating-point processor test failed.
815-101	815	Floating point processor failed.
815-102	815	Floating point processor failed.
815-200	815 7C0	Power-on self-test indicates a processor failure.
815-201	815	Processor has a status of failed. Processors with a failed status are deconfigured and therefore cannot be tested or used by the system.
817-123	817	The I/O planar time-of-day clock test failed.
817-124	817	Time of day RAM test failed.
817-210	817	The time-of-day clock is at POR.
817-211	817	Time of day POR test failed.
817-212	151	The battery is low.
817-213	817	The real-time clock is not running.
817-215	817	Time of day clock not running test failed.
817-217	817	Time of day clock not running.
887-101	887	POS register test failed.
887-102		887I/O register test failed.
887-103	887	Local RAM test failed.
887-104	887	Vital Product Data (VPD) failed.
887-105	887	LAN coprocessor internal tests failed.
887-106	887	Internal loopback test failed.
887-107	887	External loopback test failed.
887-108	887	External loopback test failed.
887-109	887	External loopback parity tests failed.
887-110	887	External loopback fairness test failed.
887-111	887	External loopback fairness and parity tests failed.
887-112	887	External loopback (twisted pair) test failed.
887-113	887	External loopback (twisted pair) parity test failed.
887-114	887	Ethernet loopback (twisted pair) fairness test failed.
887-115	887	External loopback (twisted pair) fairness and parity tests failed.
887-116	887	Twisted pair wrap data failed.
887-117	887	Software device configuration fails.
887-118	887	Device driver indicates a hardware problem.
887-120	887	Device driver indicates a hardware problem.
887-121	B08	Ethernet transceiver test failed.
887-122	B09	Ethernet 10 base-2 transceiver test failed.
887-123	887	Internal loopback test failed.
887-124	887	Software error log indicates a hardware problem.

SRN	FFC	Description and action
887-125	887	Fuse test failed.
887-202	887	Vital Product Data test failed.
887-203	887	Vital Product Data test failed.
887-209	887	RJ-45 converter test failed.
887-304	887	Coprocessor internal test failed.
887-305	887	Internal loopback test failed.
887-306	887	Internal loopback test failed.
887-307	887	External loopback test failed.
887-319	887	Software device driver indicates a hardware failure.
887-400	887	Fuse test failed.
887-401	887	Circuit breaker for Ethernet test failed.
887-402	887	Ethernet 10 Base-2 transceiver test failed.
887-403	887	Ethernet 10 Base-T transceiver test failed.
887-405	887	Ethernet- network Rerun diagnostics in advanced mode for accurate problem determination.
254E-201	254E 221	Adapter configuration error.
254E-601	254	Error log analysis indicates adapter failure.
254E-602	254	Error log analysis indicates an error attention condition.
254E-603	254	Error log analysis indicates that the microcode could not be loaded on the adapter.
254E-604	254	Error log analysis indicates a permanent adapter failure.
254E-605	254	Error log analysis indicates permanent adapter failure is reported on the other port of this adapter.
254E-606	254	Error log analysis indicates adapter failure.
254E-701	254E 221	Error log analysis indicates permanent adapter failure.
254E-702	254E 221	Error log analysis indicates permanent adapter failure is reported on the other port of this adapter.
2567		USB integrated system-board and chassis assembly.
25A0	2631	Configuring I/O planar control logic for IDE bus devices.
25C4		Broadcom adapter
2631	2631	IDE controller - system-board and chassis assembly
2640-114	2640	IDE disk diagnostic failure
2640-115	2640 2631	IDE disk error on open or configuring device system-board and chassis assembly - IDE controller
2640-121	2640	Physical volume hardware error.
2640-131	2640	Smart status threshold exceeded.
2640-132	2640	Command timeouts threshold exceeded.
2640-133	2640	Command timeout with error condition.
2640-134	2640	Hardware command or DMA failure.
2640-135	2640	IDE DMA error with no error status.
2640-136	2640 2631	Timeout waiting for controller or drive with no busy status.

SRN	FFC	Description and action
25C4-201	25C4	Configuration error. Go to “Performing the checkout procedure” on page 106.
25C4-701	25C4	Permanent adapter failure. Go to “Performing the checkout procedure” on page 106.
25C4-601	25C4	Download firmware error. Go to “Performing the checkout procedure” on page 106.
25C4-602	25C4	EEPROM read error. Go to “Performing the checkout procedure” on page 106.
2D02	2631	Generic reference for USB controller/adapter - system-board and chassis assembly
FFC-724	FFC	Temporary device bus interface problem. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
FFC-725	FFC	Temporary device bus interface problem. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRNs A00-(x)xxx through A24-(x)xxx

Note: Some SRNs in this chapter may have 4 rather than 3 digits after the dash (–).

The *x* in the following SRNs will have a value of 1, 2, 4, or 8, with a meaning as follows:

Number	Meaning
1	Replace all FRUs listed
2	Hot swap supported
4	Software might be the cause
8	Reserved

SRN	Description	FRU/action
A00-FF0	Error log analysis is unable to determine the error. The error log indicates the following physical FRU locations as the probable causes.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A01-00x	Error log analysis indicates an error detected by the CPU, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A01-01x	GCPU internal error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A01-02x	CPU internal cache or cache controller error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A01-05x	System bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A01-06x	Time-out error waiting for I/O.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A01-07x	System bus parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A01-08x	System bus protocol/transfer error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-00x	Error log analysis indicates an error detected by the memory controller, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-01x	Uncorrectable Memory Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A02-03x	Correctable error threshold exceeded.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-04x	Memory Control subsystem internal error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-05x	Memory Address Error (invalid address or access attempt).	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-06x	Memory Data error (Bad data going to memory).	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-09x	System bus parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-10x	System bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-11x	System bus protocol/transfer error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see“POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A02-12x	I/O Host Bridge time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A02-13x	I/O Host Bridge address/data parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-00x	Error log analysis indicates an error detected by the I/O device, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-01x	I/O Bus Address parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-05x	I/O Error on non-PCI bus.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-07x	System bus address parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-09x	System bus data parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-11x	System bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-12x	Error on System bus.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A03-13x	I/O Expansion bus parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-14x	I/O Expansion bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-15x	I/O Expansion bus connection failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A03-16x	I/O Expansion unit not in an operating state.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-00x	Error log analysis indicates an environmental and power warning, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-01x	Sensor indicates a fan has failed.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-02x	System shutdown due to a fan failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-03x	Sensor indicates a voltage outside normal range.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A05-04x	System shutdown due to voltage outside normal range.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-05x	Sensor indicates an abnormally high internal temperature.	1. Make sure that: a. The room ambient temperature is within the system operating environment. b. There is unrestricted air flow around the system. c. All system covers are closed. d. There are no fan failures 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.
A05-06x	System shutdown due to abnormally high internal temperature.	1. Make sure that: a. The room ambient temperature is within the system operating environment. b. There is unrestricted air flow around the system. c. All system covers are closed. d. There are no fan failures 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.
A05-07x	Sensor indicates a power supply has failed.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-08x	System shutdown due to power supply failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-10x	System shutdown due to FRU that has failed.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A05-14x	System shutdown due to power fault with an unspecified cause.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-19x	System shutdown due to Fan failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-21x	System shutdown due to Over temperature condition.	1. Make sure that: a. The room ambient temperature is within the system operating environment. b. There is unrestricted air flow around the system. c. All system covers are closed. d. There are no fan failures 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.
A05-22x	System shutdown due to over temperature and fan failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A05-24x	Power Fault specifically due to internal battery failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-00x	Error log analysis indicates an error detected by the Service Processor, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-06x	Service Processor reports unknown communication error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A0D-07x	Internal service processor firmware error or incorrect version.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-08x	Other internal Service Processor hardware error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-09x	Service Processor error accessing Vital Product Data EEPROM.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-18x	Service Processor detected NVRAM error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-19x	Service Processor error accessing Real Time Clock/Time-of-Day Clock.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-21x	Service Processor detect error with Time-of-Day Clock backup battery.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-23x	Loss of heart beat from Service Processor.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-24x	Service Processor detected a surveillance time-out.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A0D-31x	Error detected while handling an attention/interrupt from the system hardware.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-35x	Mainstore or Cache IPL Diagnostic Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-36x	Other IPL Diagnostic Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-37x	Clock or PLL Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-38x	Hardware Scan or Initialization Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A0D-40x	FRU Presence/Detect Error (Mis-Plugged).	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A10-100	The resource is unavailable due to an error. System is operating in degraded mode.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A10-200	The resource was marked failed by the platform. The system is operating in degraded mode.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A10-210	The processor has been deconfigured. The system is operating in degraded mode.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A11-00x	A non-critical error has been detected. Error log analysis indicates an error detected by the CPU, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A11-01x	A non-critical error has been detected, a CPU internal error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A11-02x	A non-critical error has been detected, a CPU internal cache or cache controller error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A11-03x	A non-critical error has been detected, an external cache parity or multi-bit ECC error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, see “Solving undetermined problems” on page 135
A11-05x	A non-critical error has been detected, a system bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A11-06x	A non-critical error has been detected, a time-out error waiting for an I/O device.	Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.
A11-50x	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A11-510	Resource has been deconfigured and is no longer in use due to a trend toward an unrecoverable error.	1. Schedule maintenance; the system is operating in a degraded mode. 2. Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.
A11-540	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.
A11-550	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.
A12-00x	A non-critical error has been detected. Error log analysis indicates an error detected by the memory controller, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-01x	A non-critical error has been detected, an uncorrectable memory error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-02x	A non-critical error has been detected, an ECC correctable error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-03x	A non-critical error has been detected, a correctable error threshold exceeded.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-04x	A non-critical error has been detected, a memory control subsystem internal error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A12-05x	A non-critical error has been detected, a memory address error (invalid address or access attempt).	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-06x	A non-critical error has been detected, a memory data error (bad data going to memory).	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-07x	A non-critical error has been detected, a memory bus/switch internal error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-08x	A non-critical error has been detected, a memory time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-09x	A non-critical error has been detected, a system bus parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-10x	A non-critical error has been detected, a system bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-11x	A non-critical error has been detected, a system bus protocol/transfer error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-12x	A non-critical error has been detected, an I/O host bridge time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A12-13x	A non-critical error has been detected, a I/O host bridge address/data parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-15x	A non-critical error has been detected, a system support function error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-16x	A non-critical error has been detected, a system bus internal hardware/switch error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A12-50x	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.
A13-00x	A non-critical error has been detected, a error log analysis indicates an error detected by the I/O device, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-01x	A non-critical error has been detected, an I/O bus address parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-02x	A non-critical error has been detected, an I/O bus data parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-03x	A non-critical error has been detected, an I/O bus time-out, access or other error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A13-04x	A non-critical error has been detected, an I/O bridge/device internal error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-05x	A non-critical error has been detected, an I/O error on non-PCI bus.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-06x	A non-critical error has been detected, a mezzanine bus address parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-07x	A non-critical error has been detected, a system bus address parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-09x	A non-critical error has been detected, a system bus data parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-11x	A non-critical error has been detected, a system bus time-out error	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-12x	A non-critical error has been detected, an error on system bus.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-13x	A non-critical error has been detected, an I/O expansion bus parity error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A13-14x	A non-critical error has been detected, an I/O expansion bus time-out error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-15x	A non-critical error has been detected, an I/O expansion bus connection failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-16x	A non-critical error has been detected, an I/O expansion unit not in an operating state.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A13-50x	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log for an entry around this time. If no entry is found, replace the system-board and chassis assembly.
A15-01x	Sensor indicates a fan is turning too slowly.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-03x	Sensor indicates a voltage outside normal range.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-05x	Sensor indicates an abnormally high internal temperature.	1. Make sure that: a. The room ambient temperature is within the system operating environment. b. There is unrestricted air flow around the system. c. All system covers are closed. d. There are no fan failures 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A15-07x	Sensor indicates a power supply has failed.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-11x	Sensor detected a redundant fan failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-12x	Sensor detected redundant power supply failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-13x	Sensor detected a redundant FRU that has failed.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-14x	Power fault due to unspecified cause.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-17x	Internal redundant power supply failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-19x	Fan failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-20x	Non-critical cooling problem, loss of redundant fan.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A15-21x	Over temperature condition.	1. Make sure that: a. The room ambient temperature is within the system operating environment. b. There is unrestricted air flow around the system. c. All system covers are closed. d. There are no fan failures 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.
A15-22x	Fan failure and Over temperature condition.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-23x	Non-critical power problem, loss of redundant power supply.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-24x	Power Fault specifically due to internal battery failure.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A15-50x	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.
A1D-00x	A non-critical error has been detected. Error log analysis indicates an error detected by the Service Processor, but the failure could not be isolated.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-02x	A non-critical error has been detected, an I/O (I2C) general bus error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A1D-04x	A non-critical error has been detected, an internal service processor memory error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-05x	A non-critical error has been detected, a service processor error accessing special registers.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-06x	A non-critical error has been detected, a service processor reports unknown communication error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-07x	A non-critical error has been detected,: Internal service processor firmware error or incorrect version.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-08x	A non-critical error has been detected, another internal service processor hardware error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-09x	A non-critical error has been detected, a service processor error accessing vital product data EEPROM.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-12x	A non-critical error has been detected, a service processor error accessing fan sensor.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-13x	A non-critical error has been detected, a service processor error accessing a thermal sensor.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A1D-18x	A non-critical error has been detected, a service processor detected NVRAM error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-19x	A non-critical error has been detected, a service processor error accessing real time clock/time-of-day clock.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-20x	A non-critical error has been detected: Service processor error accessing scan controller/hardware.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-21x	A non-critical error has been detected, a service processor detected error with time-of-day clock backup battery.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-23x	A non-critical error has been detected: Loss of heart beat from Service Processor.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-24x	A non-critical error has been detected, a service processor detected a surveillance time-out.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-29x	A non-critical error has been detected, a service process error accessing power control network.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-30x	A non-critical error has been detected: Non-supported hardware.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A1D-31x	A non-critical error has been detected: Error detected while handling an attention/interrupt from the system hardware.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-34x	A non-critical error has been detected: Wire Test Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-35x	A non-critical error has been detected: Mainstore or Cache IPL Diagnostic Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-37x	A non-critical error has been detected: Clock or PLL Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-38x	A non-critical error has been detected: Hardware Scan or Initialization Error.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-40x	A non-critical error has been detected: Presence/Detect Error (Mis-Plugged).	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. If no entry is found, replace the system-board and chassis assembly.
A1D-50x	Recoverable errors on resource indicate a trend toward an unrecoverable error. However, the resource could not be deconfigured and is still in use. The system is operating with the potential for an unrecoverable error.	1. If repair is not immediately available, reboot and the resource will be deconfigured; operations can continue in a degraded mode. 2. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 3. If no entry is found, replace the system-board and chassis assembly.

SRN	Description	FRU/action
A24-000	Spurious interrupts on shared interrupt level have exceeded threshold	1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace part numbers reported by the diagnostic program. 3. If no entry is found, replace the system-board and chassis assembly.
A24-xxx	Spurious interrupts have exceeded threshold.	1. Check the BladeCenter management module event log; if an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace part numbers reported by the diagnostic program. 3. If no entry is found, replace the system-board and chassis assembly.

SRNs for SCSI Devices (ssss-102 through ssss-640)

Use the following table to identify an SRN when you suspect a SCSI device problem. Replace the parts in the order that the FFCs are listed.

Notes:

1. Some SRNs in this chapter may have 4 rather than 3 digits after the dash (–).
2. The *ssss* before the dash (–) represents the 3 or 4 digit SCSI SRN.

SRN	FFC	Description and action
ssss-102	ssss	An unrecoverable media error occurred. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-104	ssss	The motor failed to restart. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-105	ssss	The drive did not become ready. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-106	ssss	The electronics card test failed. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRN	FFC	Description and action
ssss-108	ssss	The bus test failed. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-110	ssss	The media format is corrupted. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-112	ssss	The diagnostic test failed. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-114	ssss	An unrecoverable hardware error. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-116	ssss	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.
ssss-117	ssss	A write-protect error occurred. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-118	ssss 252B	A SCSI command time-out occurred. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-120	ssss	A SCSI busy or command error. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRN	FFC	Description and action
ssss-122	ssss	A SCSI reservation conflict error. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-124	ssss	A SCSI check condition error occurred. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-126	ssss 252B	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 or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-128	252B ssss software	The error log analysis indicates a hardware failure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-129	252B ssss software	Error log analysis indicates a SCSI bus problem. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-130	ssss	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 or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-132	ssss	A disk drive hardware error occurred. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-134	252B software	The adapter failed to configure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

SRN	FFC	Description and action
ssss-135	ssss 252B software	The device failed to configure. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-136	ssss	The certify operation failed. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-137	ssss 252B	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 or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-138	ssss	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.
ssss-140	199 252B ssss	Error log analysis indicates poor signal quality. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.
ssss-640	ssss	Error log analysis indicates a path error. 1. Check the BladeCenter management module event log. If an error was recorded by the system or if a checkpoint code is displayed on the console, see “POST checkpoint codes” on page 9. 2. Replace any parts reported by the diagnostic program. 3. Replace the system-board and chassis assembly.

Failing function codes

Failing function codes (FFCs) represent functions within the system unit.

Note: When replacing a component, perform system verification for the component (see “Using the diagnostics program” on page 111).

FFC	Description and notes
151	1. Battery **Note:** After replacing the battery, make sure that: a. The time and date are set. b. Network IP addresses are set (for blade servers that start up from a network). 2. System-board and chassis assembly
152	System-board and chassis assembly
166	Check management module event log for a BladeCenter blower or fan fault. (See the documentation that comes with the BladeCenter unit.)
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. **Note:** If more than one pair of memory DIMMs are reported missing: 1. Replace the system-board and chassis assembly 2. Replace the memory DIMM at the physical location code that is reported
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 – PCI bridge problem)
293	System-board and chassis assembly (PCI – PCI bridge problem)
294	System-board and chassis assembly (MPIC interrupt controller problem)
296	PCI device or adapter problem. **Note:** The replacement part can only be identified by the location code reported by diagnostics.
2C4	System-board and chassis assembly
2C6	512 MB DIMM 1 GB DIMM 2 GB DIMM 4 GB DIMM
2C7	System-board and chassis assembly (Memory controller)
2C8	System-board and chassis assembly
2C9	System-board and chassis assembly
2CC	1 GB memory module
2CE	512 MB memory module
2D2	System-board and chassis assembly (Mezzanine bus arbiter problem)

FFC	Description and notes
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)
2D6	System-board and chassis assembly (I2C secondary)
2D7	System-board and chassis assembly (VPD module)
2D9	System-board and chassis assembly (Power controller)
2E0	System-board and chassis assembly (Fan sensor problem)
2E1	System-board and chassis assembly (Thermal sensor problem)
2E2	System-board and chassis assembly (Voltage sensor problem)
2E3	System-board and chassis assembly (Serial port controller problem)
2E4	System-board and chassis assembly (JTAG/COP controller problem)
2E8	System-board and chassis assembly (Cache controller)
303	Memory module 512 MB
304	Memory module 1 GB
308	System-board and chassis assembly (I/O bridge problem)
650	Unknown hard disk drive. **Note:** This FFC indicates that the hard disk drive could not properly configure.
711	Unknown adapter
7C0	System-board and chassis assembly (CPU/system interface)
812	System-board and chassis assembly (Common standard adapter logic problem)
814	System-board and chassis assembly (NVRAM problem)
815	System-board and chassis assembly (floating point processor problem)
817	System-board and chassis assembly (time-of-day logic)
820	System-board and chassis assembly (interprocessor related testing problem)
887	System-board and chassis assembly (integrated Ethernet adapter)
893	Vendor LAN adapter
D01	System-board and chassis assembly (cache problem)
E19	System-board and chassis assembly (power supply sensor failed)
252B	System-board and chassis assembly (SAS controller)
2552	SAS 36.4 GB hard disk drive
2553	SAS 73.4 GB hard disk drive
2567	System-board and chassis assembly (USB integrated adapter)
25A0	System-board and chassis assembly
25C4	Broadcom Ethernet adapter
2631	System-board and chassis assembly
2D02	System-board and chassis assembly (generic USB reference to controller/adapter)

Checkout procedure

The checkout procedure is the sequence of tasks that you should follow to diagnose a problem in the blade server.

About the checkout procedure

Before performing the checkout procedure for diagnosing hardware problems, review the following information:

- Read the safety information that begins on page vii.
- The firmware diagnostic program provides the primary methods of testing the major components of the blade server. 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 blade server 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.

  Exception: If there are multiple error codes or light path diagnostics LEDs that indicate a microprocessor error, the error might be in a microprocessor or in a microprocessor socket. See “Microprocessor problems” on page 118 for information about diagnosing microprocessor problems.
- If the blade server is halted and a POST checkpoint code is displayed, see “POST checkpoint codes” on page 9. If the blade server is halted and no error message is displayed, see “Troubleshooting tables” on page 113 and “Solving undetermined problems” on page 135.
- For intermittent problems, check the management module event log and “POST checkpoint codes” on page 9.
- If the blade server front panel shows no LEDs, verify the blade server status and errors in the BladeCenter Web interface; also see “Solving undetermined problems” on page 135.
- If device errors occur, see “Troubleshooting tables” on page 113.

Performing the checkout procedure

To perform the checkout procedure, complete the following steps:

Step 001 Perform the following steps:

1. If the blade server is running, turn off the blade server.
2. Turn on the blade server and establish an SOL session; then continue to Step **002**. If the blade server does not start, see “Troubleshooting tables” on page 113.

Step 002 Check for the following information:

1. If the firmware hangs on an eight-digit progress code, see “Progress codes” on page 10.
2. If the firmware displays an eight-digit error code, see “Attention codes” on page 34 or “Error codes” on page 37.
3. If the firmware displays a service request number (SRN), see “SRN tables” on page 67.

4. Check the BladeCenter management module event log. If an error was recorded by the system, see “Attention codes” on page 34 or “Error codes” on page 37.
5. If no error was recorded, or if the login prompt appears and you still suspect a problem, continue to Step **003**.

Step 003 Is the operating system AIX?

Yes Record any information or messages that may be provided on the system console; then go to Step **005**.

No Go to Step **004**.

Step 004 Is the operating system Linux?

Yes Record any information or messages that may be provided on the system console; then go to Step **007**. If you cannot load the *Standalone Diagnostics* CD, answer this question *No*.

No Go to “Solving undetermined problems” on page 135.

Step 005 Perform the following steps:

Note: When possible, run AIX Online Diagnostics in concurrent mode. AIX Online Diagnostics perform additional functions, compared to the *Standalone Diagnostics* CD.

1. Perform the AIX online diagnostics, see “Starting AIX concurrent diagnostics” on page 108. Record any diagnostic results and see the “SRN tables” on page 67 to identify the failing component.

   Note: When replacing a component, perform system verification for the component (see “Using the diagnostics program” on page 111).
2. If you cannot perform AIX concurrent online diagnostics; continue to Step **006**.

Step 006 Perform the following steps:

1. Use the management-module Web interface to make sure that the device from which you load the standalone diagnostics is set as the first device in the blade server boot sequence.
2. Turn off the system unit power and wait 45 seconds before proceeding.
3. Turn on the blade server and establish an SOL session.
4. Check for the following responses:
   a. Progress codes are displayed on the console.
   b. Record any messages or diagnostic information that may be displayed on the system console.
5. Load the Standalone Diagnostics. Go to “Starting standalone diagnostics from a CD” on page 109 or “Starting standalone diagnostics from a NIM server” on page 110.
6. If you have replaced the failing component, perform system verification for the component (see “Using the diagnostics program” on page 111

This ends the AIX procedure.

Step 007 Perform the following steps:

1. Use the management-module Web interface to make sure that the device from which you load the standalone diagnostics is set as the first device in the blade server boot sequence.
2. Turn off the blade server and wait 45 seconds before proceeding.
3. Turn on the blade server and establish an SOL session.
4. Check for the following responses:
   a. Progress codes are displayed on the console.
   b. Record any messages or diagnostic information that may be displayed on the system console.

   Continue with step **008** .

Step 008 Load the Standalone Diagnostics. Go to “Starting standalone diagnostics from a CD” on page 109 or “Starting standalone diagnostics from a NIM server” on page 110.

Can you load the standalone diagnostics?

No Go to “Solving undetermined problems” on page 135.

Yes Select the resources to be tested and record any SRNs; then go to “SRN tables” on page 67.

This ends the Linux procedure.

Verifying the partition configuration

Perform the following steps if there is a configuration problem with the system or a logical partition.

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 there are enough functioning processor and memory 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 and Keylock partition properties are set to Normal.
4. If the problem remains, contact your software service provider for further assistance.

Running the diagnostics program

The diagnostics program can be started and run from the AIX operating system, from a CD, or from a management server.

Starting AIX concurrent diagnostics

Perform the following steps to start AIX concurrent diagnostics from the AIX operating system:

1. Log in to the AIX operating system as root user, or use CE login (see “Creating a CE login” on page 168 for more information). If you need help, contact the system operator.

2. Type `diag` and press Enter at the operating system prompt to start the diagnostics program, and display the Function Selection menu (see “Using the diagnostics program” on page 111 for more information about running the diagnostics program).
3. When testing is complete, press F3 until the Diagnostic Operating Instructions screen is displayed; then press F3 again to exit the diagnostic program.

Starting standalone diagnostics from a CD

Perform the following steps to start the standalone diagnostics from a CD. These procedures can be used if the blade server is running a Linux operating system or if an AIX operating system cannot start the concurrent diagnostics program.

The latest version of the standalone diagnostics can be downloaded from the World Wide Web at http://www14.software.ibm.com/webapp/set2/sas/f/diags/home.html.

1. Verify with the system administrator and systems users that the blade server may be shut down. Stop all programs; then, shut down the operating system and shut down the blade server (refer to the documentation that comes with your operating system documentation for information about shutting down the operating system).
2. Press the CD button on the front of the blade server to give it ownership of the BladeCenter media tray.
3. Using the management module Web interface, make sure that:
   - The blade server firmware is at the latest version.
   - SOL is enabled for the blade server.
   - The CD or DVD drive is selected as the first boot device for the blade server.
4. Insert the *Standalone Diagnostics* CD into the CD or DVD drive.
5. Turn on the blade server and establish an SOL session.

   Note: It can take from 3 to 5 minute to load the standalone diagnostics from the CD. Please be patient.

   The screen will display “Please define the System Console.”
6. Type `1` and press Enter to continue.

   The Diagnostic Operating Instructions screen will display.
7. Press Enter to continue.

   The Function Selection screen will display. (See “Using the diagnostics program” on page 111 for more information about running the diagnostics program.)

   Note: If the Define Terminal screen is displayed, type the terminal type and press Enter. The use of “vs100” as the terminal type is recommended; however, the function keys (F#) may not work. In this case, press Esc and the number in the screen menus. For example, instead of F3 you can press the Esc key and the 3 key.
8. When testing is complete, press F3 until the Diagnostic Operating Instructions screen is displayed; then press F3 again to exit the diagnostic program.
9. Remove the CD from the CD or DVD drive.

Starting standalone diagnostics from a NIM server

Perform the following steps to start the standalone diagnostics from a network installation management (NIM) server.

Note: Refer to the *Network Installation Management Guide and Reference* for information about configuring the blade server as a NIM server client.

1. Verify with the system administrator and systems users that the blade server may be shut down. Stop all programs; then, shut down the operating system and shut down the blade server (refer to 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 blade server and establish an SOL session.
3. Perform the following steps to check the NIM server boot settings:
   a. When the POST menu is displayed, press the 1 key 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 setup to allow the pinging of 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 112; then, follow the steps for network boot problems.
4. Using the management module Web interface, make sure that the NIM server network is selected as the first boot device for the blade server.
5. Restart the blade server and establish an SOL session.

   If the Diagnostic Operating Instructions screen is displayed, the diagnostics program has started successfully.

   Note: If the AIX login prompt is displayed, the diagnostics program did not load. See “Boot problem resolution” on page 112; then, follow the steps for network boot problems.
6. Press Enter to continue.

   The Function Selection screen will display. (See “Using the diagnostics program” on page 111 for more information about running the diagnostics program.)

   Note: If the Define Terminal screen is displayed, type the terminal type and press Enter. The use of “vs100” as the terminal type is recommended; however, the function keys (F#) may not work. In this case, press Esc and the number in the screen menus. For example, instead of F3 you can press the Esc key and the 3 key.
7. When testing is complete, press F3 until the Diagnostic Operating Instructions screen is displayed; then press F3 again to exit the diagnostic program.

Using the diagnostics program

This section provides the basic procedures for running the diagnostics program.

1. Start the diagnostics from the AIX operating system, from a CD, or from a management server (see “Starting AIX concurrent diagnostics” on page 108, “Starting standalone diagnostics from a CD” on page 109, or “Starting standalone diagnostics from a NIM server” on page 110.
2. The Function Selection menu is displayed. Use the steps listed to perform one of the following tasks:
   - **Problem Determination**
     a. From the Function Selection menu, 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 “SRN tables” on page 67 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.
   - **System Verification**
     a. From the Function Selection menu, 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 “SRN tables” on page 67 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. From the Function Selection menu, 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 screen is displayed; then press F3 again to exit the diagnostic program.

Boot problem resolution

Depending on the boot device, a checkpoint may be displayed on the console for an extended period of time while the boot image is retrieved from the device. This is particularly true for CD and network boot attempts. When booting from a CD, watch for a blinking activity LED on the CD or DVD drive. A blinking activity LED indicates that the loading of either the boot image, or additional information required by the operating system being booted, is still in progress. If the checkpoint is displayed for an extended period of time and the CD- or DVD-drive activity LED is not blinking, there might be a problem loading the boot image from the device.

Note: For network boot attempts, if the system is not connected to an active network, or if there is no server 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 retries, the system may appear to be hung.

If you suspect a problem loading the boot image, complete the following steps:

001 Make sure that your boot list is correct.

1. From the BladeCenter management-module Web interface, display the boot sequences for the blade servers in your BladeCenter unit: **Blade Tasks → Configuration → Boot Sequence**.
2. Find your blade server 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 blade server from the list of servers and modify the boot sequence. Cycle power on your blade server to retry the boot.

   Note: If **Network** is selected, the blade server will try to boot from both Ethernet ports on the system board.
3. If this boot attempt fails, do the following:
   a. If you are attempting to boot from the network, go to Step **002**.
   b. If you are attempting to boot from the CD or DVD drive, go to Step **003**.
   c. If you are attempting to boot from a hard disk drive, go to Step **004**.

002 If you are attempting to boot from the network:

1. Make sure that the network cabling to the BladeCenter network switch is correct.
2. Check with the network administrator to make sure that the network is up.
3. Verify that the blade server for your system is running and configured to respond to your system.
4. Turn the blade server power off; then, turn it on and retry the boot operation.
5. If the boot still fails, replace the system-board and chassis assembly.

003 If you are attempting to boot from the CD or DVD drive:

1. From the BladeCenter management-module Web interface, make sure that the media tray is assigned to your blade server: **Blade Tasks → Remote Control**.
2. Turn the blade server power off; then, turn it on and retry the boot operation.

3. If the boot fails, try a known-good bootable CD.
4. If possible, try to boot another blade server in the BladeCenter unit to verify that the CD or DVD drive is functional.
   - If the CD boots on the second server, replace the system-board and chassis assembly in the JS21 blade server you were originally trying to boot.
   - If the CD fails on the second server, replace the CD or DVD drive in the media tray.
5. If replacing the CD or DVD drive does not resolve the problem, replace the media tray.
6. If booting on all servers fails using the new media tray, replace the following in the BladeCenter unit:
   - Management module
   - Midplane

004 If you are attempting to boot from a hard disk drive.

1. Verify that the hard disk drive is installed. If you are trying to boot from the second hard disk drive, verify that the second hard disk drive is installed.
2. Select the CD or DVD drive as the boot device.
3. Go to “Performing the checkout procedure” on page 106.
4. Reload the operating system onto the hard disk drive if boot attempts from that disk continue to fail.
5. Replace the suspect hard disk drive if you are not able to load the operating system.
6. Replace the system-board and chassis assembly; then, retry loading the operating system.

Troubleshooting tables

Use the troubleshooting tables to find solutions to problems that have identifiable symptoms. If these symptoms relate to shared BladeCenter unit resources, see “Solving shared BladeCenter resource problems” on page 130.

If you cannot find the problem in these tables, see “Running the diagnostics program” on page 108 for information about testing the blade server.

If you have just added new software or a new optional device and the blade server 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 blade server is running correctly.
3. Reinstall the new software or new device.

CD or DVD drive problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
The CD or DVD drive is not recognized.	1. Make sure that: • All cables and jumpers are installed correctly. • The correct device driver is installed for the CD or DVD drive. 2. Reseat the CD or DVD drive. 3. Replace the CD or DVD drive.
A CD or DVD is not working correctly.	1. Clean the CD or DVD. 2. Reseat the CD or DVD drive. 3. Replace the CD or DVD drive.
The CD or DVD drive tray is not working.	**Note:** The blade server must have ownership of the CD or DVD drive. 1. Insert the end of a straightened paper clip into the manual tray-release opening. 2. Reseat the CD or DVD drive. 3. Replace the CD or DVD drive.

The CD or DVD drive is detected as /dev/sr0 by SUSE LINUX. (If the SUSE LINUX operating system is installed remotely onto a blade server that is not the current owner of the media tray [CD or DVD drive, diskette drive, and USB port], SUSE LINUX detects the CD or DVD drive as /dev/sr0 instead of /dev/cdrom.)	Establish a link between /dev/sr0 and /dev/cdrom as follows:
	1. Enter the following command:
	`rm /dev/cdrom; ln -s /dev/sr0 /dev/cdrom`
	2. Insert the following line in the /etc/fstab file:
	`/dev/cdrom /media/cdrom auto ro,noauto,user,exec 0 0`

Diskette drive problems

• **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.** • **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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**
Diskette drive activity LED stays on, or the system bypasses the diskette drive.	1. If there is a diskette in the drive, verify that: • The diskette is inserted correctly in the drive. • The diskette is good and not damaged. (Try another diskette if you have one.) The drive light comes on (one-second flash) when the diskette is inserted. • The diskette contains the necessary files to start the computer. • The diskette drive is enabled in the Configuration/Setup utility program. • The software program is working properly. • The cable is installed correctly (in the proper orientation). 2. To prevent diskette drive read/write errors, be sure the distance between monitors and diskette drives is at least 76 mm (3 in.). 3. Reseat the following components: a. Diskette drive cable. b. Diskette drive c. Media tray card 4. Replace the components listed in step 3 one at a time, in the order shown, restarting the blade server each time.

General problems

• **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.** • **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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**
A cover lock is broken, an LED is not working, or a similar problem has occurred.	If the part is a CRU, replace it. If the part is a FRU, the part must be replaced by a trained service technician.

Hard disk drive problems

• **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.** • **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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**
Not all drives are recognized by the hard disk drive firmware or operating system.	1. Remove the first drive not recognized; then, run the hard disk drive diagnostic test again. 2. If the remaining drives are recognized, replace the drive that you removed with a new one.
System stops responding during hard disk drive operating system commands to test or look for bad blocks.	1. Remove the hard disk drive that was being tested when the blade server stopped responding; then, run the diagnostic test again. 2. If the hard disk drive diagnostic test runs successfully, replace the drive you removed with a new one.

Intermittent problems

• **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.** • **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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**
A problem occurs only occasionally and is difficult to diagnose.	1. Make sure that: • When the blade server is turned on, air is flowing from the rear of the blade server at the blower grill. If there is no airflow, the blower is not working. This causes the blade server to overheat and shut down. • Ensure that the SCSI bus and devices are configured correctly. 2. Check the management module event log for errors

Keyboard problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
All or some keys on the keyboard do not work.	1. Make sure that: • The keyboard/video select button LED on the front of the blade server is lit, indicating that the blade server has ownership of the keyboard and video. • The keyboard cable is securely connected to the BladeCenter management module. • If you are using a PS/2 keyboard, the keyboard cable is connected to the proper connector. • The blade server is using a supported Linux operating system that has loaded completely and supports USB devices. • The blade server and the monitor are turned on. 2. Replace the keyboard. 3. Replace the management module on the BladeCenter unit; see the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit.

Memory problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
The amount of system memory displayed is less than the amount of physical memory installed.	1. Make sure that: • All installed memory is recognized in the Display Vital Product Data of `lscfg -vp`. • The memory modules are seated properly. • You have installed the correct type of memory. • If you changed the memory, you updated the memory configuration with the Configuration/Setup Utility program. • All banks of memory on the DIMMs are enabled. The blade server might have automatically disabled a DIMM bank when it detected a problem or a DIMM bank could have been manually disabled. 2. Check the management module event log for error message (checkpoint or firmware error codes). • If the DIMM was disabled by a system-management interrupt (SMI), replace the DIMM. • If the DIMM was disabled by POST, obtain the eight-digit error code and replace the failing DIMM. 3. Reseat the DIMM. 4. Replace the DIMM. 5. Replace the system-board and chassis assembly.

Microprocessor problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
The blade server will not boot or a checkpoint or firmware error code is logged in the management module event log (the startup microprocessor is not working correctly)	1. If a checkpoint or firmware error was logged in the management module event log, correct that error. 2. If no error was logged, restart the blade server and check the management module event log again for error codes. 3. Replace the system-board and chassis assembly.

Monitor or video problems

Some IBM monitors have their own self-tests. If you suspect a problem with your monitor, see the documentation that comes with the monitor for instructions for testing and adjusting the monitor. If you cannot diagnose the problem, call for service.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
The screen is blank.	1. Make sure that: • The keyboard/video select button LED on the front of the blade server is lit, indicating that the blade server has ownership of the keyboard and video. • The monitor cables are connected properly. • The monitor is turned on and the Brightness and Contrast controls are adjusted correctly. • The blade server is using a supported Linux operating system that has loaded completely. 2. If you have verified these items and the screen remains blank, replace: a. Monitor b. Management module on the BladeCenter unit (see the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit).
Only the cursor appears.	Make sure that the keyboard/video ownership on the BladeCenter unit has not been switched to another blade server. If the problem remains, see "Solving undetermined problems" on page 135.
The monitor goes blank when you direct it to a working blade server, or goes blank when you start some application programs in the blade servers.	Make sure that the monitor cable is connected to the video port on the BladeCenter management module. Some IBM monitors have their own self-tests. If you suspect a problem with the monitor, see the information that comes with the monitor for adjusting and testing instructions. If you still cannot find the problem, try using the monitor with another blade server. If the problem remains, see the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit.
The screen is wavy, unreadable, rolling, distorted, or has screen jitter.	1. If the monitor self-tests show the monitor is working properly, consider the location of the monitor. Magnetic fields around other devices (such as transformers, appliances, fluorescent lights, and other monitors) can cause screen jitter or wavy, unreadable, rolling, or distorted screen images. If this happens, turn off the monitor. (Moving a color monitor while it is turned on might cause screen discoloration.) Then move the device and the monitor at least 305 mm (12 in.) apart. Turn on the monitor. **Notes:** a. To prevent diskette drive read/write errors, be sure the distance between monitors and diskette drives is at least 76 mm (3 in.). b. Non-IBM monitor cables might cause unpredictable problems. 2. Replace the monitor. 3. Replace the system-board and chassis assembly.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
Wrong characters appear on the screen.	1. If the wrong language is displayed, update the firmware or operating system with the correct language in the blade server that has ownership of the monitor. 2. Replace the monitor. 3. Replace the system-board and chassis assembly.
No video.	1. Make sure that the correct blade server is selected, if applicable. 2. Make sure that all cables are fastened securely.

Network connection problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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 blade servers are unable to communicate with the network.	1. Make sure that: • The I/O modules for the network interface being used are installed in the correct BladeCenter bays and are configured and operating correctly. See the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit for details. • The settings in the I/O module are appropriate for the blade server (settings in the I/O module are blade-specific). 2. If the problem remains, see "Solving undetermined problems" on page 135.

Optional device problems

• **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.** • **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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**
An IBM optional device that was just installed does not work.	1. Make sure that: • The option is designed for the blade server (see the ServerProven® list at http://www.ibm.com/servers/eserver/serverproven/compat/us/). • You followed the installation instructions that came with the option. • The option is installed correctly. • You have not loosened any other installed devices or cables. 2. If the option comes with its own test instructions, use those instructions to test the option. 3. Reseat the device that you just installed. 4. Replace the device that you just installed.

Power problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
Power switch does not work and reset button, if supported, does work.	1. Reseat the control-panel connector. 2. Replace the bezel assembly. 3. Replace the system-board and chassis assembly.
The blade server does not turn on.	1. Make sure that: a. The power LED on the front of the BladeCenter unit is on. b. The LEDs on all the BladeCenter power modules are on. c. The blade server is in a blade bay that is supported by the power modules installed in the BladeCenter unit. d. The power-on LED on the blade server control panel is blinking slowly. • If the power LED is flashing rapidly and continues to do so, the blade server is not communicating with the management module; reseat the blade server and go to step 3 • If the power LED is off, the blade bay is not receiving power, the blade server is defective, or the LED information panel is loose or defective. e. Local power control for the blade server is enabled (use the BladeCenter management module Web interface to verify), or the blade server was instructed through the management module Web interface to start. 2. If you just installed a device in the blade server, remove it, and restart the blade server. If the blade server now starts, you might have installed more devices than the power to that blade bay supports. 3. Try another blade server in the blade bay; if it works, replace the faulty blade server. 4. See "Solving undetermined problems" on page 135.
The blade server turns off for no apparent reason	1. Make sure that each blade bay has a blade server, expansion unit, or blade filler correctly installed. If these components are missing or incorrectly installed, an over-temperature condition might result in shutdown. 2. If a microprocessor error LED is lit, replace the system-board and chassis assembly.
The blade server does not turn off.	1. Verify whether you are using an ACPI or non-ACPI operating system. If you are using a non-ACPI operating system: a. Press Ctrl+Alt+Delete. b. Turn off the system by holding the power-control button for 4 seconds. c. If the blade server fails during POST and the power-control button does not work, remove the blade server from the bay and reseat it. 2. If the problem remains or if you are using an ACPI-aware operating system, suspect the system-board and chassis assembly.

Service processor problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
Service processor in the management module reports a general monitor failure.	Disconnect the BladeCenter unit from all electrical sources, wait for 30 seconds, reconnect the BladeCenter unit to the electrical sources, and restart the blade server. If the problem remains, see "Solving undetermined problems" on page 135, and the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit.

Software problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.	1. To determine whether the problem is caused by the software, make sure that: • The server has the minimum memory that is needed to use the software. For memory requirements, see the information that comes with the software. **Note:** If you have just installed an adapter or memory, the blade server might have a memory-address conflict. • The software is designed to operate on the blade server. • Other software works on the blade server. • The software works on another server. 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. 3. Contact your place of purchase of the software.

Universal Serial Bus (USB) port problems

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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
A USB device does not work.	Make sure that: • The correct USB device driver is installed. • The operating system supports USB devices.

Light path diagnostics

Light path diagnostics is a system of LEDs on the control panel and on the system board of the blade server. When an error occurs, LEDs are lit throughout the blade server. By viewing the LEDs in a particular order, you can often identify the source of the error.

The system board LEDs can be lit for a short time after you remove the blade server from the BladeCenter unit. After removing the blade server cover, press and hold the light path diagnostics switch for a maximum of 25 seconds to light the LEDs. Power remains available to light these LEDs for up to 24 hours after the blade server is removed from the BladeCenter unit. These LEDs include error LEDs for the following components:

- Microprocessors
- Memory modules (DIMMs)
- Hard disk drives
- I/O expansion option

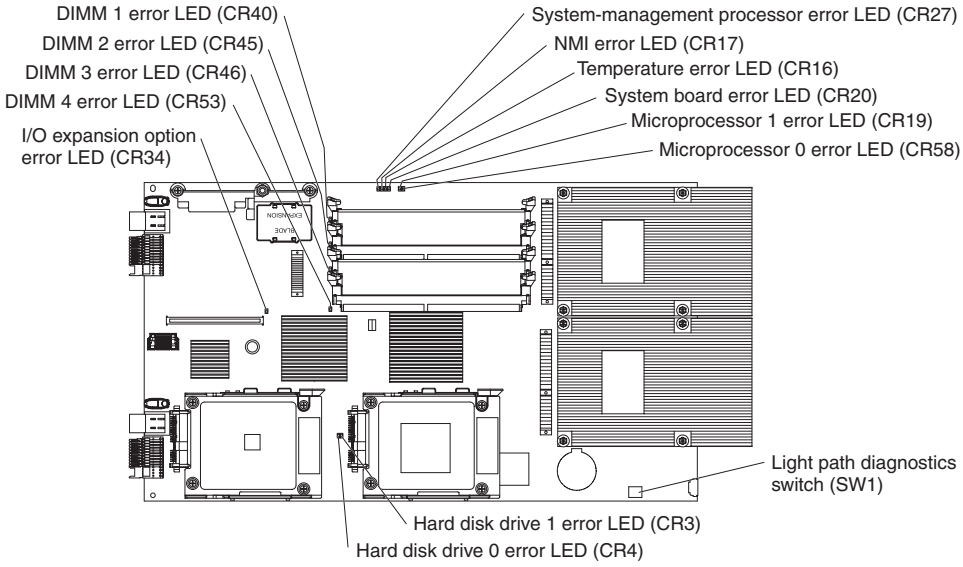
Viewing the light path diagnostics LEDs

Before working inside the blade server to view light path diagnostics LEDs, read the safety information that begins on page vii and “Handling static-sensitive devices” on page 142.

If an error occurs, view the light path diagnostics LEDs in the following order:

1. Look at the control panel on the front of the blade server (see “Blade server control panel buttons and LEDs” on page 4).
   - If the information LED is lit, it indicates that information about a suboptimal condition in the blade server is available in the management-module event log.
   - If the blade-error LED is lit, it indicates that an error has occurred; go to step 2.
2. To view the light path diagnostics panel and LEDs, complete the following steps:
   a. Remove the blade server from the BladeCenter unit.
   b. Place the blade server on a flat, static-protective surface.
   c. Remove the cover from the blade server.
   d. Press and hold the light path diagnostics switch to relight the LEDs that were lit before you removed the blade server from the BladeCenter unit. The LEDs will remain lit for as long as you press the switch, to a maximum of 25 seconds.

The following illustration shows the locations of the system board error LEDs.



Light path diagnostics LEDs

The following table describes the LEDs on the system board, and suggested actions to correct the detected problems.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Lit light path diagnostics LED	Description	Action
None	An error has occurred and cannot be isolated, or the service processor has failed.	An error has occurred that is not represented by a light path diagnostics LED. Check the management module event log for information about the error.
DIMM x error	A memory error occurred.	1. Make sure that the DIMM indicated by the lit LED is supported. 2. Reseat the DIMM indicated by the lit LED. 3. Replace the DIMM indicated by the lit LED. **Note:** Multiple DIMM LEDs do not necessarily indicate multiple DIMM failures. If more than one DIMM LED is lit, reseat or replace one DIMM at a time until the error goes away. Refer to the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit for further isolation.
Hard disk drive x error	A hard disk drive error occurred.	1. Reseat the hard disk drive indicated by the lit LED. 2. Replace the hard disk drive indicated by the lit LED.

- **Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.**
- **See Chapter 3, "Parts listing, Types 7988 and 8844," on page 137 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.**

Lit light path diagnostics LED	Description	Action
I/O expansion option error	A I/O expansion option error occurred.	1. Make sure that the I/O expansion option is supported. 2. Reseat the I/O expansion option. 3. Replace the I/O expansion option.
Microprocessor x error	The microprocessor has failed.	1. Replace the blade server cover, reinsert the blade server in the BladeCenter unit, and then restart the blade server. 2. Check the management module event log for information about the error. 3. Replace the system-board and chassis assembly.
NMI error	The system board has failed.	1. Replace the blade server cover, reinsert the blade server in the BladeCenter unit, and then restart the blade server. 2. Check the management module event log for information about the error. 3. Replace the system-board and chassis assembly.
System board error	The system board has failed	1. Replace the blade server cover, reinsert the blade server in the BladeCenter unit, and then restart the blade server. 2. Check the management module event log for information about the error. 3. Replace the system-board and chassis assembly.
System-management processor error	The service processor has failed	1. Replace the blade server cover, reinsert the blade server in the BladeCenter unit, and then restart the blade server. 2. Check the management module event log for information about the error. 3. Replace the system-board and chassis assembly.
Temperature error	The system temperature has exceeded a threshold level.	1. Check to see if a blower on the BladeCenter unit has failed. If it has, replace the blower (see the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit for more information). 2. Make sure that the room temperature is not too high. (See "Features and specifications" on page 3 for temperature information.)

Firmware problem isolation

To isolate a firmware problem, complete the following steps in the order in which they are listed until the problem is solved.

Step 001 Perform the following steps:

1. If the blade server is operating, shut down the operating system and turn off the blade server.
2. Turn on the blade server.
3. If the problem no longer occurs, no further action is necessary; otherwise, continue to Step **002**.

Step 002 Does the blade server boot up far enough to allow the installation of server firmware updates?

Yes Check for server firmware updates; then, install the updates if available.

No Continue to Step **003**.

Step 003 Perform the following steps:

1. Go to "Recovering the system firmware."
2. After recovering the system firmware, check for server firmware updates; then, install the updates if available.

Recovering the system firmware

The system firmware is contained in two separate images in the flash memory of the blade server: temporary and permanent. These images are referred to as TEMP and PERM, respectively. The blade server normally starts from the TEMP image, and the PERM image serves 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.

If your system hangs, you can force the system to start from the PERM image using the BIOS code page jumper (J14).

- Setting jumper J14 to pins 2 and 3 will force the blade server to start up from the PERM image.
- Setting jumper J14 to pins 1 and 2 will enable the blade server to start (boot) from either the TEMP or PERM image.

Starting the PERM image

To force the blade server to start the PERM (permanent) image, complete the following steps:

1. Turn off the blade server.
2. Remove the blade server from the BladeCenter unit (see "Removing the blade server from a BladeCenter unit" on page 143).
3. Remove the blade-server cover (see "Removing the blade server cover" on page 145).
4. Locate the BIOS code page jumper (J14) on the system board (see "System-board jumpers" on page 8).
5. Move the jumper to pins 2 and 3 to enable system firmware recovery mode.

Statement 21:

CAUTION:
Hazardous energy is present when the blade server is connected to the power source. Always replace the blade cover before installing the blade server.

6. Replace the cover (see “Installing the blade server cover” on page 146), reinstall the blade server in the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144), and restart the blade server.
7. If the blade server starts up and displays the operating-system prompt, see “Recovering the TEMP image from the PERM image” to restore the TEMP image.

Note: If the blade server does not start up properly, replace the system-board and chassis assembly.

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. To perform the reject function, complete the following steps:

1. If you have not started the system from the PERM image, do so now (see “Starting the PERM image” on page 127).
2. Reject the TEMP image.
   - If you are using the Red Hat Linux or SUSE Linux operating system, type the following command:

     ```
     update_flash -r
     ```

   - If you are using the AIX® operating system, type the following command:

     ```
     /usr/lpp/diagnostics/bin/update_flash -r
     ```

3. Shut down the blade server using the operating system.
4. If you have not moved jumper J14 as described in “Starting the PERM image” on page 127, restart the blade server.
5. If you moved jumper J14 as described in “Starting the PERM image” on page 127, complete the following steps:
   a. Turn off the blade server.
   b. Remove the blade server from the BladeCenter unit (see “Removing the blade server from a BladeCenter unit” on page 143).
   c. Remove the blade-server cover (see “Removing the blade server cover” on page 145).
   d. Locate the BIOS code page jumper (J14) on the system board (see “System-board jumpers” on page 8).
   e. Move the jumper to pins 1 and 2.

Statement 21:

CAUTION:
Hazardous energy is present when the blade server is connected to the power source. Always replace the blade cover before installing the blade server.

f. Replace the cover (see “Installing the blade server cover” on page 146), reinstall the blade server in the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144), and restart the blade server.

g. Verify that the system starts from the TEMP image (see “Verifying the system firmware levels”).

You might need to update the firmware code to the latest version. See “Updating the firmware” on page 165 for more information about how to update the firmware code.

Verifying the system firmware levels

The diagnostics program displays what the current system firmware levels are for the TEMP and PERM images. This function also displays which image the blade server used to start up.

1. Load the diagnostics program (see “Running the diagnostics program” on page 108).
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 Update and Manage System Flash menu is displayed. The top of the screen displays the system firmware level for the PERM and the TEMP images, and the image that the blade server used to start up.

   Note: If the TEMP image level is more current than the PERM image, see “Committing the TEMP system firmware image.”
4. When you have verified the firmware levels, press F3 until the Diagnostic Operating Instructions screen is displayed; then press F3 again to exit the diagnostic program.

Committing the TEMP system firmware image

After updating the system firmware, and successfully starting up the blade server from the TEMP image, copy TEMP image to the PERM image using the diagnostics program commit function.

1. Load the diagnostics program (see “Running the diagnostics program” on page 108).
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 screen is displayed; then press F3 again to exit the diagnostic program.

Solving shared BladeCenter resource problems

Problems with BladeCenter shared resources might appear to be in the blade server. The following sections provide procedures to help you isolate blade server problems from shared BladeCenter resource problems. If the problem is thought to be with a shared resource, see the *Problem Determination and Service Guide* or the *Hardware Maintenance Manual and Troubleshooting Guide* for your BladeCenter unit and other BladeCenter component documentation for additional information. If the problem cannot be solved, see “Solving undetermined problems” on page 135.

To check the general function of shared BladeCenter resources, complete the following operations:

- Make sure that:
  - The BladeCenter unit has the required power modules installed and is connected to a working power source.
  - Power management has been correctly set for your BladeCenter unit configuration.
- Check if the problem is being experienced with more than one blade server. Perform a test of the function on a known-good blade server.
- Try the blade server in a different blade bay.
- Try a known-good blade server in the blade bay.

Keyboard problems

To check for keyboard problems, complete the following steps until the problem is solved:

1. Make sure that:
   - Both the blade server and the monitor are turned on.
   - The keyboard/video select button LED on the front of the blade server is lit, indicating that the blade server is connected to the shared keyboard.
   - The keyboard cable is securely connected to the active BladeCenter management-module.
   - The keyboard or mouse works with another blade server.
2. Check for correct management-module operation (see the documentation for your BladeCenter unit).

   Note: Some BladeCenter unit types have several management-module components that might need to be tested or replaced (see the *Installation Guide* for your management module for more information).
3. Replace the keyboard.
4. Replace the management module (see the documentation for your BladeCenter unit).

If these steps do not resolve the problem, it is likely a problem with the blade server. See “Keyboard problems” on page 117.

Media tray problems

To check for problems with the media tray (removable media drives and USB ports), complete the following steps until the problem is solved:

1. Make sure that:
   - The media-tray select button LED on the front of the blade server is lit, indicating that the blade server is connected to the shared media tray.
   - The media tray devices work with another blade server.
2. Check if the problem affects more than one media tray component:
   - USB ports
   - Diskette drive
   - CD or DVD drive
3. For problems affecting only a USB port:
   a. Make sure that the USB device is operational. If using a USB hub, make sure that the hub is operating correctly and that any software the hub requires is installed. Plug the USB device directly into the USB port, bypassing the hub, to check its operation.
   b. Reseat the following components:
      1) USB device cable
      2) Media tray cable (if applicable)
      3) Media tray
   c. Replace the following components one at a time, in the order shown, restarting the blade server each time:
      1) USB cable (if applicable)
      2) Media tray cable (if applicable)
      3) Media tray
   d. Continue with step 7 on page 132.
4. For problems affecting only the diskette drive:
   a. If there is a diskette in the drive, make sure that:
      - The diskette is inserted correctly in the drive.
      - The diskette is good and not damaged; the drive LED light flashes once per second when the diskette is inserted. (Try another diskette if you have one.)
      - The diskette contains the necessary files to start the blade server.
      - The software program is working properly.
      - The distance between monitors and diskette drives is at least 76 mm (3 in.).
   b. Continue with step 6 on page 132.
5. For problems affecting only the CD or DVD drive:
   a. Make sure that:
      - The CD or DVD is inserted correctly in the drive. If necessary, insert the end of a straightened paper clip into the manual tray-release opening to eject the CD or DVD. The drive LED light flashes once per second when the CD or DVD is inserted.
      - The CD or DVD is clean and not damaged. (Try another CD or DVD if you have one.)
      - The software program is working properly.
   b. Continue with step 6 on page 132.

6. For problems affecting one or more of the removable media drives:
   a. Reseat the following components:
      1) Removable-media drive cable (if applicable)
      2) Removable-media drive
      3) Media tray cable (if applicable)
      4) Media tray
   b. Replace the following components one at a time, in the order shown, restarting the blade server each time:
      1) Removable-media drive cable (if applicable)
      2) Media tray cable (if applicable)
      3) Removable-media drive
      4) Media tray
   c. Continue with step 7.
7. Check for correct management-module operation (see the documentation for your BladeCenter unit).

   Note: Some BladeCenter unit types have several management-module components that might need to be tested or replaced (see the *Installation Guide* for your management module for more information).
8. Replace the management module (see the documentation for your BladeCenter unit).

If these steps do not resolve the problem, it is likely a problem with the blade server. See “CD or DVD drive problems” on page 114 or “Universal Serial Bus (USB) port problems” on page 123.

Network connection problems

To check for network connection problems, complete the following steps until the problem is solved:

1. Make sure that:
   - The network cables are securely connected to the I/O module.
   - Power configuration of the BladeCenter unit supports the I/O module configuration.
   - Installation of the I/O-module type is supported by the BladeCenter unit and blade server hardware.
   - The I/O modules for the network interface that is being used are installed in the correct BladeCenter bays, and are configured and operating correctly.
   - The settings in the I/O module are correct for the blade server (settings in the I/O module are specific to each blade server).
2. Check for correct I/O-module operation; troubleshoot and replace the I/O module as indicated in the documentation for the I/O module.
3. Check for correct management-module operation (see the documentation for your BladeCenter unit).

   Note: Some BladeCenter unit types have several management-module components that might need to be tested or replaced (see the *Installation Guide* for your management module for more information).
4. Replace the management module (see the documentation for your BladeCenter unit).

If these steps do not resolve the problem, it is likely a problem with the blade server. See “Network connection problems” on page 120.

Power problems

To check for power problems, make sure that:

- The LEDs on all the BladeCenter power modules are lit.
- Power is being supplied to the BladeCenter unit.
- Installation of the blade server type is supported by the BladeCenter unit.
- The BladeCenter unit has the correct power configuration to operate the blade bay where your blade server is installed (see the documentation for your BladeCenter unit).
- The BladeCenter unit power management configuration and status support blade server operation (see the *Management Module User’s Guide* or the *Management Module Command-Line Interface Reference Guide* for information).
- Local power control for the blade server is correctly set (see the *Management Module User’s Guide* or the *Management Module Command-Line Interface Reference Guide* for information).
- The BladeCenter unit blowers are correctly installed and operational.

If these operations do not solve the problem, it is likely a problem with the blade server. See “Power problems” on page 122.

Video problems

To check for video problems, complete the following steps until the problem is solved:

1. Make sure that:
   - Both the blade server and the monitor are turned on, and that the monitor brightness and contrast controls are correctly adjusted.
   - The keyboard/video select button LED on the front of the blade server is lit, indicating that the blade server is connected to the shared BladeCenter monitor.
   - The video cable is securely connected to the BladeCenter management-module. Non-IBM monitor cables might cause unpredictable problems.
   - The monitor works with another blade server.
   - Some IBM monitors have their own self-tests. If you suspect a problem with the monitor, see the information that comes with the monitor for instructions for adjusting and testing the monitor. If the monitor self-tests show that the monitor is working correctly, consider the location of the monitor. Magnetic fields around other devices (such as transformers, appliances, fluorescent lights, and other monitors) can cause screen jitter or wavy, unreadable, rolling, or distorted screen images. If this happens, turn off the monitor.

     Attention: Moving a color monitor while it is turned on might cause screen discoloration.

     Move the device and the monitor at least 305 mm (12 in.) apart. Turn on the monitor. To prevent diskette drive read/write errors, make sure that the distance between the monitor and any diskette drive is at least 76 mm (3 in.).
2. Check for correct management-module operation (see the documentation for your BladeCenter unit).

   Note: Some BladeCenter unit types have several management-module components that might need to be tested or replaced (see the *Installation Guide* for your management module for more information).
3. Replace the monitor cable, if applicable.
4. Replace the monitor.
5. Replace the management module (see the documentation for your BladeCenter unit).

If these steps do not resolve the problem, it is likely a problem with the blade server. See “Monitor or video problems” on page 119.

Solving undetermined problems

Note: When you are diagnosing a problem in the JS21 Type 7988 or 8844 blade server, you must determine whether the problem is in the blade server or in the BladeCenter unit.

- If all of the blade servers have the same symptom, it is probably a BladeCenter unit problem; for more information, see the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* for your BladeCenter unit.
- If the BladeCenter unit contains more than one blade server and only one of the blade servers has the problem, troubleshoot the blade server that has the problem.

Check the LEDs on all the power supplies of the BladeCenter unit where the blade server is installed. If the LEDs indicate that the power supplies are working correctly, and reseating the blade server does not correct the problem, complete the following steps:

1. Make sure that the control panel connector is correctly seated on the system board (see “System-board connectors” on page 7 for the location of the connector).
2. If no LEDs on the control panel are working, replace the bezel assembly; then, try to power-on the blade server from the BladeCenter Web interface (see the *BladeCenter Management Module User’s Guide* for more information).
3. Turn off the blade server.
4. Remove the blade server from the BladeCenter unit 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 blade server each time.
   - I/O expansion option.
   - Hard disk drives.
   - Memory modules. The minimum configuration requirement is 1 GB (two 512 MB DIMMs).

   The following minimum configuration is required for the blade server to start:
   - System-board and chassis assembly (with two microprocessors)
   - Two 512 MB DIMMs
   - A functioning BladeCenter unit
6. Install and turn on the blade server. If the problem remains, suspect the following components in the following order:
   a. DIMM
   b. System-board and chassis assembly

If the problem is solved when you remove an I/O expansion option from the blade server but the problem recurs when you reinstall the same expansion option, suspect the expansion option; if the problem recurs when you replace the expansion option with a different one, suspect the System-board and chassis assembly.

If you suspect a networking problem and the blade server passes all the system tests, suspect a network cabling problem that is external to the system.

Calling IBM for service

See Appendix A, “Getting help and technical assistance,” on page 171 for information about calling IBM for service.

When you call for service, have as much of the following information available as possible:

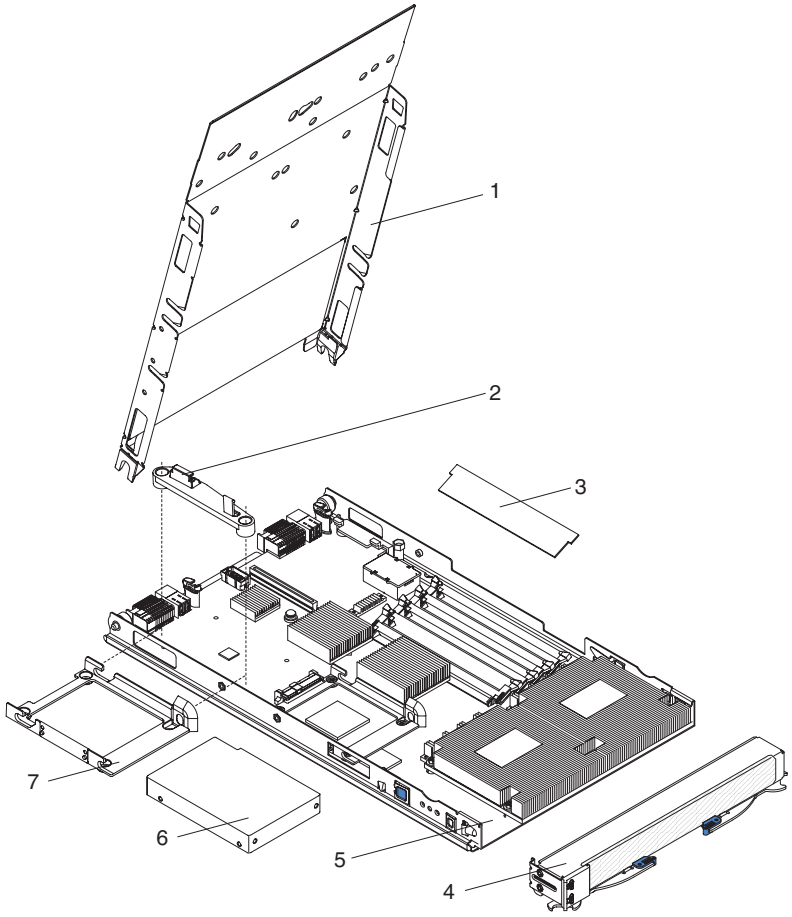
- Machine type and model
- Microprocessor and hard disk drive upgrades
- Failure symptoms
  - Does the blade server fail the diagnostic programs? If so, what are the error codes?
  - What occurs? When? Where?
  - Is the failure repeatable?
  - Has the current server configuration ever worked?
  - What changes, if any, were made before it failed?
  - Is this the original reported failure, or has this failure been reported before?
- Diagnostic program type and version level
- Hardware configuration (print screen of the system summary)
- BIOS code level
- Operating-system type and version level

You can solve some problems by comparing the configuration and software setups between working and nonworking blade server. When you compare blade servers to each other for diagnostic purposes, consider them identical only if all the following factors are exactly the same in all of the blade servers:

- Machine type and model
- BIOS level
- Adapters and attachments, in the same locations
- Address jumpers, terminators, and cabling
- Software versions and levels
- Diagnostic program type and version level
- Configuration option settings
- Operating-system control-file setup

Chapter 3. Parts listing, Types 7988 and 8844

The following replaceable components are available for the JS21 Type 7988 blade server, and models 31X, 51X, E3X, and E5X of the JS21 Type 8844 blade server.



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 may 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 blade server.
- **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 *Warranty and Support Information* document.

Index	Description	CRU No. (Tier 1)	CRU No. (Tier 2)	FRU No.
1	Cover (all models)	42D8680		
2	Bracket, expansion (all models)	32R2451		
3	Memory, 512 MB DDR2, PC2-3200, 400 MHz (model 31x)	39M5820		
3	Memory, 512 MB DDR2, PC2-3200, 400 MHz (option)	39M5820		
3	Memory, 512 MB DDR2, PC2-4200, 533 MHz (option)	41Y2706		
3	Memory, 1 GB DDR2, PC2-3200, 400 MHz (models 41x, 51x)	39M5808		
3	Memory, 1 GB DDR2, PC2-3200, 400 MHz (option)	39M5808		
3	Memory, 1 GB DDR2, PC2-4200, 533 MHz (model E3x)	41Y2710		
3	Memory, 1 GB DDR2, PC2-4200, 533 MHz (option)	41Y2710		
3	Memory, 2 GB DDR2, PC2-3200, 400 MHz (option)	39M5811		
3	Memory, 2 GB DDR2, PC2-4200, 533 MHz (model E5x)	41Y2714		
3	Memory, 2 GB DDR2, PC2-4200, 533 MHz (option)	41Y2714		
3	Memory, 4 GB DDR2, PC2-3200, 400 MHz (option)	41Y2702		
3	Memory, 4 GB DDR2, PC2-4200, 533 MHz (option)	41Y2722		
4	Bezel assembly, OEM (Type 7988)	32R0858		
4	Bezel assembly with control panel	32R2435		
5	System-board and chassis assembly, with 2 PPC970MP dual-core microprocessors (Types 8844-51X, 8844-E5X)		43X1813	
5	System-board and chassis assembly, with 2 PPC970MP single-core microprocessors (Types 8844-31X, 8844-E3X)		43X1814	
5	System-board and chassis assembly, with 2 PPC970MP single-core microprocessors (Type 7988)		44T5708	
5	System-board and chassis assembly, with 2 PPC970MP dual-core microprocessors (Type 7988)		44T5709	
6	Hard disk drive, 36.4 GB SAS (option)	26K5778		
6	Hard disk drive, 73.4 GB SAS (Types 8844-E3X, 8844-E5X)	26K5779		
6	Hard disk drive, 73.4 GB SAS (option)	26K5779		
6	Hard disk drive, 146.8 GB SAS (option)	42D0422		
	Tray, SAS hard disk drive (all models)	31R2239		
	Battery, 3.0 volt	33F8354		
	Blade base 2.3 GHz, 2 way (models 31x, E3x)		46K7402	
	Blade base 2.3 GHz, 4 way (models 41x, 51x, E4x)		46K7405	
	Ethernet expansion card (option)	13N2306		
	Ethernet expansion card (option)	39Y9304		
	Ethernet expansion card (option)	39Y9308		
	Fibre channel expansion card (option)	26K4859		
	Fibre channel expansion card, 2 Gb (option)	26R0836		
	Fibre channel expansion card (option)	26R0837		
	Fibre channel expansion card (option)	26R0893		
	Fibre channel expansion card, 4 Gb (option)	39Y9184		
	Gigabit Ethernet Daughter Card (option)	13N2306		

Index	Description	CRU No. (Tier 1)	CRU No. (Tier 2)	FRU No.
	Gummo Gigabit Ethernet assembly (option)	46M5963		
	Infiniband expansion card (option)	26K6459		
	Infiniband expansion card, four-port (option)	32R1763		
	Kit, miscellaneous	32R2451		
	Label, FRU list (all models)	32R2434		
	Label, OEM (Type 7988)	44T5707		
	Label, system service (all models)	32R2433		
	Label, system service (Type 7988)	44T5704		
	Myrinet expansion card (option)	32R1845		
	Zeppo Fibre Channel daughter card assembly (option)	41Y8504		

Chapter 4. Removing and replacing blade server 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 will be charged for the installation.
- **Tier 2 customer replaceable unit:** You may 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 blade server.
- **Field replaceable unit (FRU):** FRUs must be installed only by trained service technicians.

See Chapter 3, “Parts listing, Types 7988 and 8844,” on page 137 to determine whether a component is a Tier 1 CRU, Tier 2 CRU, or FRU.

For information about the terms of the warranty and getting service and assistance, see the *Warranty and Support Information* document.

Installation guidelines

Before you install options, read the following information:

- Read the safety information that begins on page vii and the guidelines in “Handling static-sensitive devices” on page 142. This information will help you work safely.
- 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 blade server from the BladeCenter unit, you must shut down the operating system and turn off the blade server. You do not have to shut down the BladeCenter unit itself.
- Blue on a component indicates touch points, where you can grip the component to remove it from or install it in the blade server, 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 blade server and operating system support hot-swap capability, you can remove or install the component while the blade server is running. (Orange can also indicate touch points 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.
- For a list of supported options for the blade server, see http://www.ibm.com/servers/eserver/serverproven/compat/us/.

System reliability guidelines

To help ensure proper cooling and system reliability, observe the following guidelines:

- Make sure that microprocessor socket 2 always contains either a microprocessor heat sink filler or a microprocessor and heat sink. If the blade server has only one microprocessor, it must be installed in the microprocessor socket 1.
- To maintain proper system cooling, do not operate the BladeCenter unit without a blade server, expansion unit, or filler blade installed in each blade bay. See the documentation for your BladeCenter unit type for additional information.

Handling static-sensitive devices

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

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

- When working on the BladeCenter T unit, use an electrostatic discharge (ESD) wrist strap, especially when you will be handling modules, options, and blade servers. To work properly, the wrist strap must have a good contact at both ends (touching your skin at one end and firmly connected to the ESD connector on the front or back of the BladeCenter T unit).
- 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 BladeCenter unit or any unpainted metal surface on any other grounded rack component in the rack 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 blade server 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 blade server cover or on a metal surface.
- Take additional care when handling devices during cold weather. Heating reduces indoor humidity and increases static electricity.

Returning a device or component

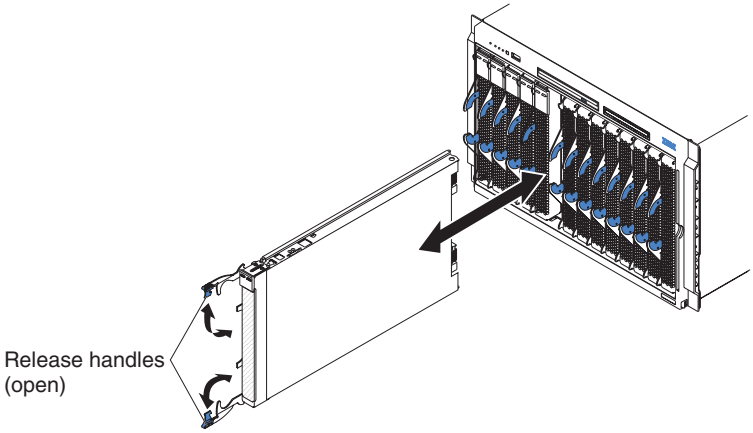
If you are instructed to return a device or component, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Removing the blade server from a BladeCenter unit

Attention:

- To maintain proper system cooling, do not operate the BladeCenter unit without a blade server, expansion unit, or blade filler installed in each blade bay.
- Note the bay number. Reinstalling a blade server into a different bay than the one from which it was removed could have unintended consequences. Some configuration information and update options are established according to bay number; if you reinstall the blade server into a different bay, you might have to reconfigure the blade server.

To remove the blade server from a BladeCenter unit, complete the following steps.

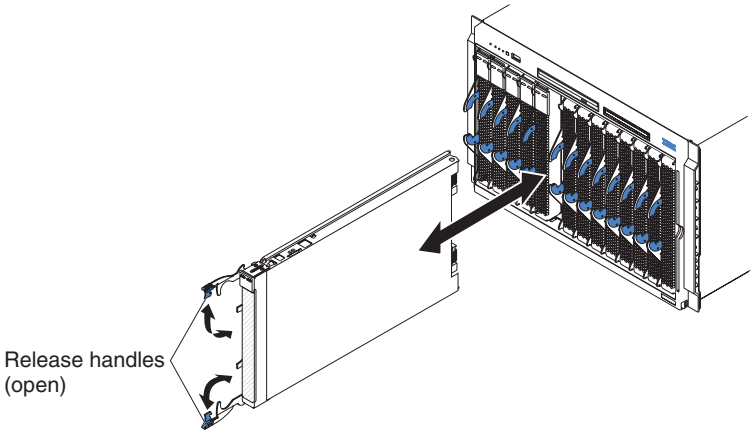


1. Read the safety information that begins on page vii and “Installation guidelines” on page 141 through “Handling static-sensitive devices” on page 142.
2. If the blade server is operating, shut down the operating system; then, press the power-control button (behind the blade server control panel door) to turn off the blade server (see “Turning off the blade server” on page 7 for more information).

   Attention: Wait at least 30 seconds, until the hard disk drives stop spinning, before proceeding to the next step.
3. Open the two release handles. The blade server moves out of the bay approximately 0.6 cm (0.25 inch).
4. Pull the blade server out of the bay. Spring-loaded doors further back in the bay move into place to cover the bay temporarily.
5. Carefully lay the blade server down on a flat, non-conductive surface, with the cover side up.
6. Place either a blade filler or another blade server in the bay within 1 minute. The recessed spring-loaded doors will move out of the way as you insert the blade or filler blade.

Installing the blade server in a BladeCenter unit

To install a blade server in a BladeCenter unit, complete the following steps.



Statement 21:

CAUTION:
Hazardous energy is present when the blade server is connected to the power source. Always replace the blade cover before installing the blade server.

1. Make sure that the release handles on the blade server are in the open position (perpendicular to the blade server).
2. If you installed a filler blade or another blade in the bay from which you removed the blade server, remove it from the bay.

   Attention: You must install the blade server in the same blade bay from which you removed it. Some blade server configuration information and update options are established according to bay number. Reinstalling a blade server into a different blade bay from the one from which it was removed could have unintended consequences, and you might have to reconfigure the blade server.
3. Slide the blade server into the blade bay from which you removed it until it stops. The spring-loaded doors farther back in the bay that cover the bay opening move out of the way as you insert the blade server.
4. Push the release handles on the front of the blade server closed.
5. Turn on the blade server (see “Turning on the blade server” on page 6 for instructions) and make sure that the power-on LED on the blade control panel is lit continuously, indicating that the blade server is receiving power and is turned on.
6. (Optional) Write identifying information on one of the user labels that come with the blade servers and place the label on the BladeCenter unit bezel.

   Important: Do not place the label on the blade server or in any way block the ventilation holes on the blade server (see the documentation that comes with your BladeCenter unit for information about the label placement).

If you have changed the configuration of the blade server, or this is a different blade server than the one you removed, you must configure the blade server and you might have to install the blade server operating system (see the *Installation and User's Guide* for detailed information about these tasks).

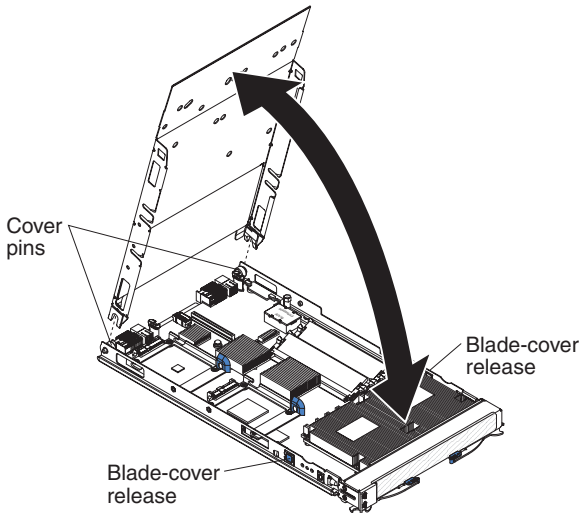
Removing and replacing Tier 1 CRUs

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.

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

Removing the blade server cover

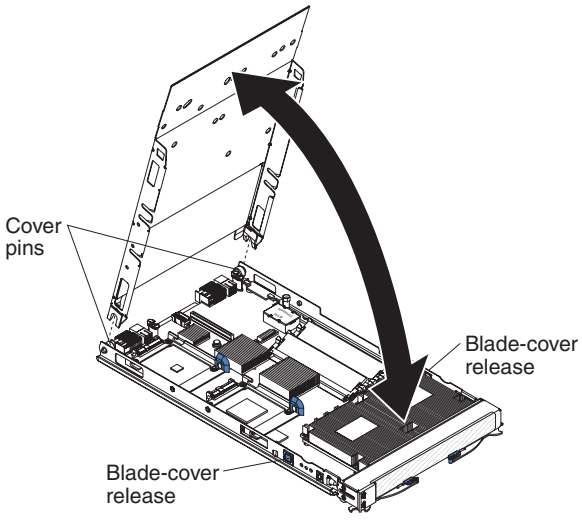
To remove the blade server cover, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Press the blade-cover release on each side of the blade server and lift the cover open.
4. Lift the cover from the blade server and store it for future use.

Installing the blade server cover

To install the blade server cover, complete the following steps.



Statement 21:

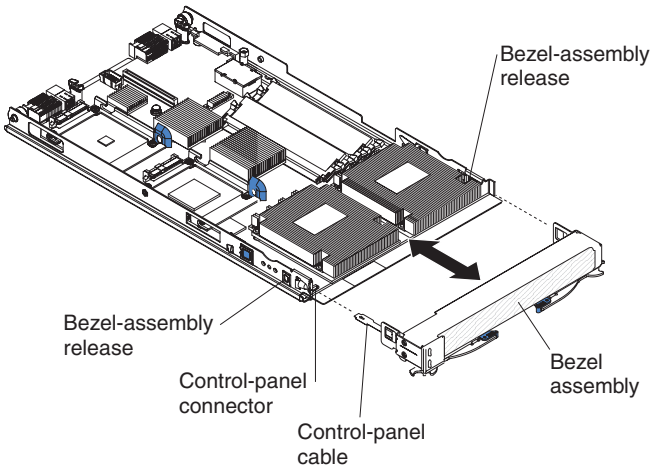
CAUTION:
Hazardous energy is present when the blade server is connected to the power source. Always replace the blade cover before installing the blade server.

Important: The blade server cannot be inserted into the BladeCenter unit until the cover is installed and closed. Do not attempt to override this protection.

1. Lower the cover so that the slots at the rear slide down onto the pins at the rear of the blade server. Before closing the cover, check that all components are installed and seated correctly and that you have not left loose tools or parts inside the blade server.
2. Pivot the cover to the closed position until it clicks into place.
3. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing the bezel assembly

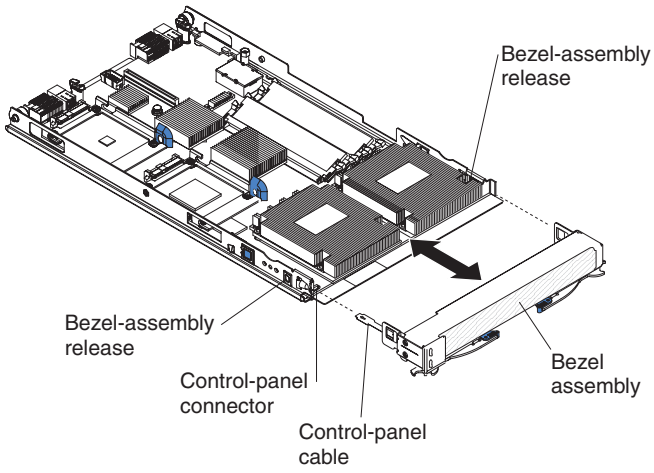
To remove the bezel assembly, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Press the bezel-assembly release on each side of the blade server and pull the bezel assembly away from the blade server approximately 1.2 cm (0.5 inch).
5. Disconnect the control-panel cable from the control-panel connector.
6. Pull the bezel assembly away from the blade server.
7. 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

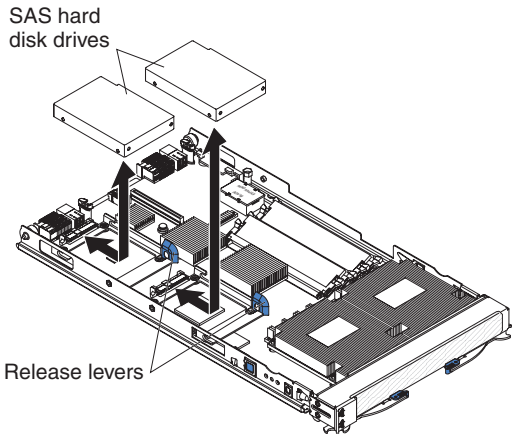
To install the bezel assembly, complete the following steps.



1. Connect the control-panel cable to the control-panel connector on the system board.
2. Carefully slide the bezel assembly onto the blade server until it clicks into place.
3. Install the blade server cover (see “Installing the blade server cover” on page 146).
4. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing a SAS hard disk drive

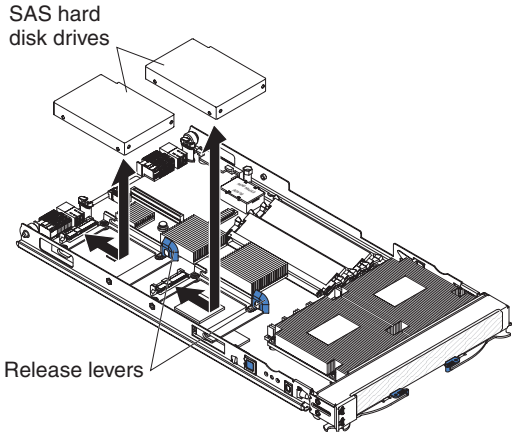
To remove a SAS hard disk drive, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Locate the hard disk drive to be removed (see “System-board connectors” on page 7 for the location of the hard disk drive connectors).
5. While pulling the blue release lever at the front of the hard disk drive tray, slide the drive forward to disengage the connector; then, lift it out of the drive tray.

Installing a SAS hard disk drive

To install a SAS hard disk drive, complete the following steps.

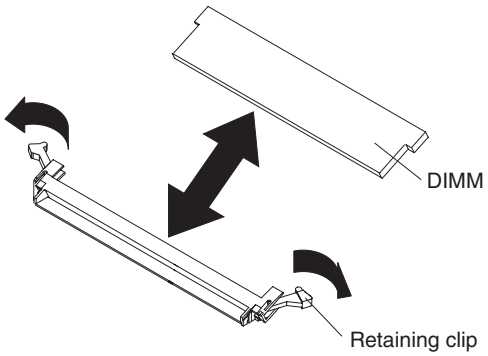


1. Identify the location in which the hard disk drive will be installed.

   Attention: Do not press on the top of the drive. Pressing the top could damage the drive.
2. Place the drive into the hard disk drive tray and push it toward the rear of the drive, into the connector until the drive moves past the lever at the front of the tray.
3. Install the blade server cover (see “Installing the blade server cover” on page 146).
4. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing a memory module

To remove a dual-inline memory module (DIMM), complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Locate the DIMM connector that contains the DIMM that is to be replaced (see “System-board connectors” on page 7 for DIMM slot locations).

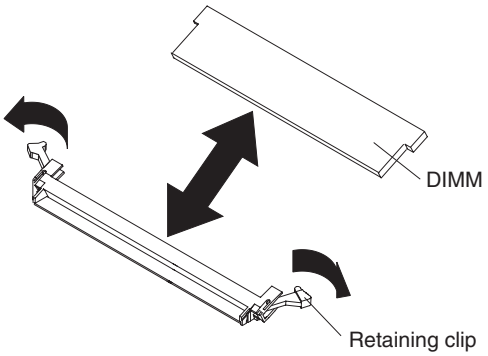
   Attention: To avoid breaking the DIMM retaining clips or damaging the DIMM connectors, open and close the clips gently.
5. Carefully open the retaining clips on each end of the DIMM connector and remove the DIMM.
6. If you are instructed to return the DIMM, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Installing a memory module

Note: If you are replacing a faulty DIMM, make sure that the replacement DIMM is the correct type of memory. If you are adding DIMMs, install the DIMMs in the sequence shown in the following table. See the *Installation and User's Guide* for additional information about the type of memory that is compatible with the blade server.

Pair	DIMM connectors
First	2 and 4
Second	1 and 3

To install a DIMM, complete the following steps.



1. Read the documentation that comes with the DIMMs.
2. Locate the DIMM connector into which the DIMM will be installed (see "System-board connectors" on page 7 for DIMM slot locations).
3. Touch the static-protective package that contains the DIMM to any *unpainted* metal surface on the BladeCenter unit or any *unpainted* metal surface on any other grounded rack component; then, remove the DIMM from its package.
4. Make sure that both of the connector retaining clips are in the fully open position.
5. 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, open and close the clips gently.
6. Insert the DIMM by pressing the DIMM along the guides into the connector. Make sure that the retaining clips snap into the closed positions.

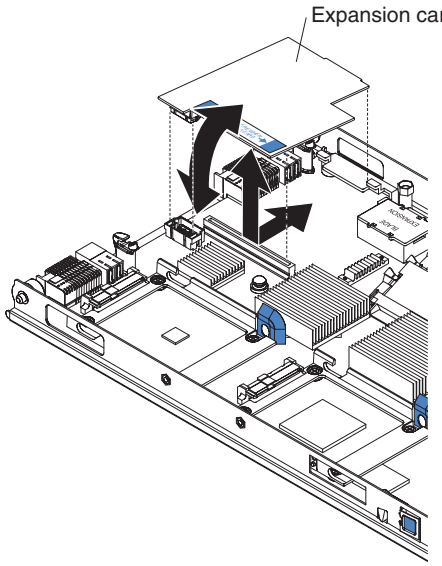
   Important: If there is a gap between the DIMM and the retaining clips, the DIMM has not been correctly installed. In this case, open the retaining clips and remove the DIMM; then, reinsert the DIMM.
7. Install the blade server cover (see "Installing the blade server cover" on page 146).
8. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 144).

Removing and installing an I/O expansion card

The following sections describe how to remove and install small-form-factor and standard-form-factor I/O expansion cards in the blade server.

Removing a small-form-factor expansion card

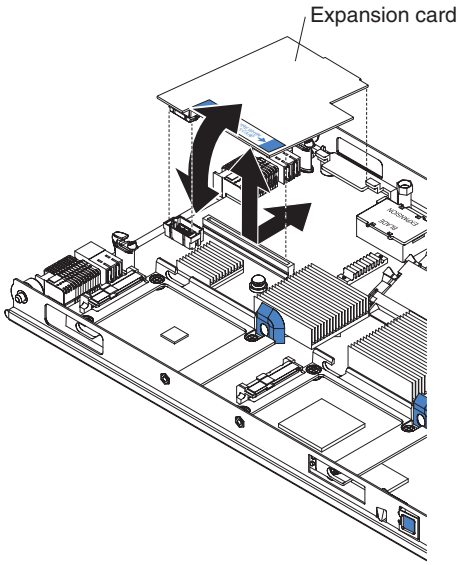
To remove a small-form-factor expansion card, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Gently pivot the wide end of the card out of the expansion card connectors; then, slide the notched end of the card out of the raised hooks on the system board and lift the card out of the blade server.
5. 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.

Installing a small-form-factor expansion card

To install a small-form-factor expansion card, complete the following steps.

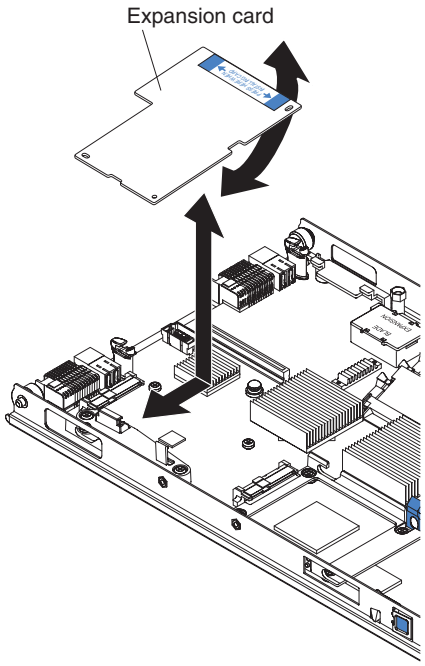


1. Touch the static-protective package that contains the expansion card to any *unpainted* metal surface on the BladeCenter unit or any *unpainted* metal surface on any other grounded rack component; then, remove the expansion card from its package.
2. Orient the expansion card over the system board.
3. Slide the notch in the narrow end of the card into the raised hooks on the system board; then, gently pivot the card into the expansion card connectors.

   Note: For device-driver and configuration information to complete the installation of the expansion card, see the documentation that comes with the expansion card.
4. Install the blade server cover (see “Installing the blade server cover” on page 146).
5. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing a standard-form-factor expansion card

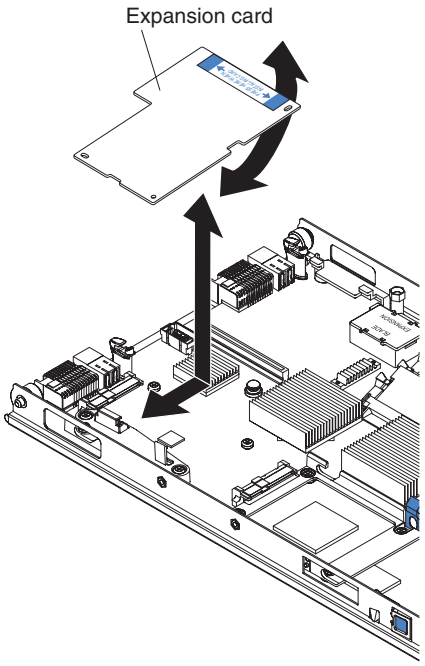
To remove a standard-form-factor expansion card, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Gently pivot the wide end of the card out of the expansion card connectors; then, slide the notched end of the card out of the raised hooks on the expansion bracket and lift the card out of the blade server.
5. 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.

Installing a standard-form-factor expansion card

To install a standard-form-factor expansion card, complete the following steps.

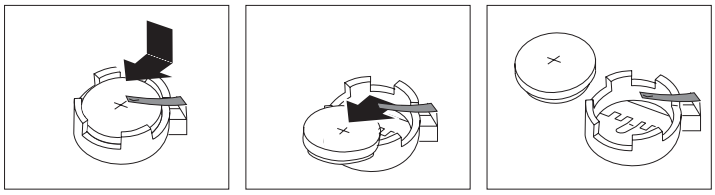


1. Touch the static-protective package that contains the expansion card to any *unpainted* metal surface on the BladeCenter unit or any *unpainted* metal surface on any other grounded rack component; then, remove the expansion card from its package.
2. Orient the expansion card and slide the notch in the narrow end of the card into the raised hooks on the expansion bracket; then, gently pivot the wide end of the card into the expansion card connectors.

   Note: For device-driver and configuration information to complete the installation of the expansion card, see the documentation that comes with the expansion card.
3. Install the blade server cover (see “Removing the blade server cover” on page 145).
4. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing the battery

To remove the battery, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Locate the battery on the system board (see “System-board connectors” on page 7 for the location of the battery connector).
5. Use your finger to press down on one side of the battery; then, slide the battery out from its socket. The spring mechanism will push the battery out toward you as you slide it from the socket.

   Note: You might need to lift the battery clip slightly with your fingernail to make it easier to slide the battery.
6. Use your thumb and index finger to pull the battery from under the battery clip.

   Note: After you remove the battery, press gently on the clip to make sure that the battery clip is touching the base of the battery socket.

Installing the battery

The following notes describe information that you must consider when replacing the battery in the blade server.

- 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 U.S. and Canada, call your IBM marketing representative or authorized reseller.
- After you replace the battery, you must reconfigure the blade server and reset the system date and time.
- To avoid possible danger, read and follow the following safety statement.

Statement 2:

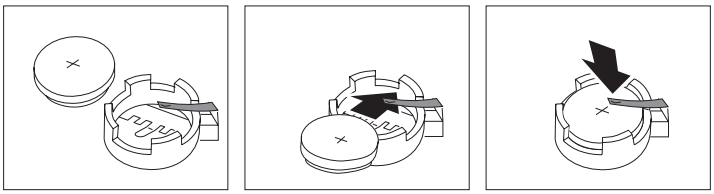
CAUTION:
When replacing the lithium battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium 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.

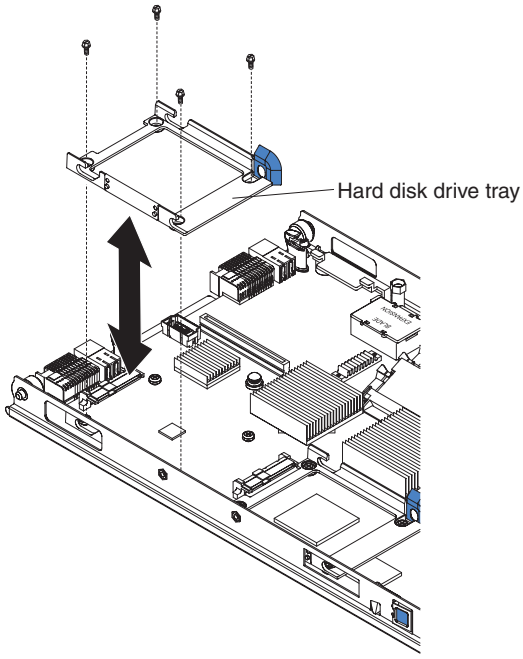
To install the battery, complete the following steps.



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, under the battery clip. Make sure that the side with the positive (+) symbol is facing up.
3. As you slide it under the battery clip, press the battery down into the socket.
4. Install the blade server cover (see “Installing the blade server cover” on page 146).
5. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).
6. Turn on the blade server and reset the system date and time through the operating system that you installed. For additional information, see your operating-system documentation.
7. Make sure that the boot list is correct using the management module Web interface (see the management module documentation for more information) or the SMS Utility (see “Using the SMS utility” on page 166 for more information).

Removing a hard disk drive tray

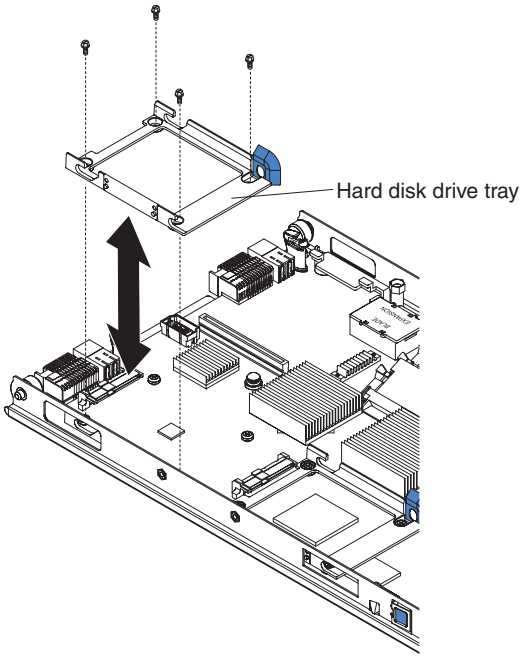
To remove a hard disk drive tray, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. Remove the hard disk drive that is installed in the drive tray to be removed (see “Removing a SAS hard disk drive” on page 149).
5. Remove the four screws that secure the drive tray to the system board and remove the drive tray.

Installing a hard disk drive tray

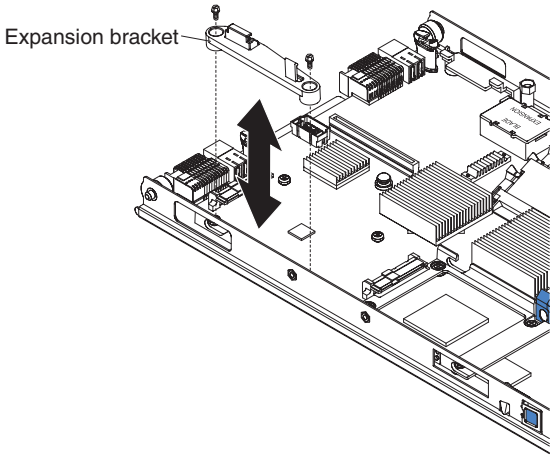
To install a hard disk drive tray, complete the following steps.



1. Place the drive tray into position on the system board and install the four screws to secure it.
2. Install the hard disk drive that was removed from the drive tray (see “Installing a SAS hard disk drive” on page 150 for instructions).
3. Install the blade server cover (see “Installing the blade server cover” on page 146).
4. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing the expansion bracket

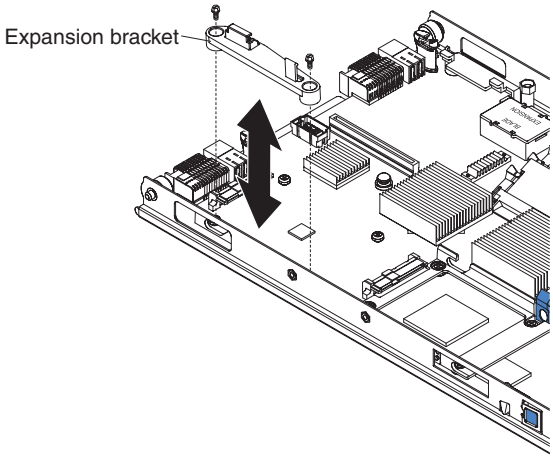
To remove the expansion bracket, complete the following steps.



1. Read the safety information that begins on page vii and “Installation guidelines” on page 141.
2. If the blade server is installed in a BladeCenter unit, remove it (see “Removing the blade server from a BladeCenter unit” on page 143).
3. Remove the blade server cover (see “Removing the blade server cover” on page 145).
4. If a standard-form-factor expansion card is installed, remove it (see “Removing a standard-form-factor expansion card” on page 155).
5. Remove the two screws that secure the expansion bracket to the system board and remove the expansion bracket.
6. If you are instructed to return the expansion bracket, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Installing the expansion bracket

To install the expansion bracket, complete the following steps.



1. Place the expansion bracket in position on the system board and install the two scews that secure it to the system board.
2. Install the standard-form-factor expansion card, if one was removed (see “Installing a standard-form-factor expansion card” on page 156).
3. Install the blade server cover (see “Installing the blade server cover” on page 146).
4. Install the blade server into the BladeCenter unit (see “Installing the blade server in a BladeCenter unit” on page 144).

Removing and replacing Tier 2 CRUs

You may 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 the blade server.

Replacing the system-board and chassis assembly

This section describes how to replace the system-board and chassis assembly. When replacing the system board, you will replace the system board, blade base (chassis), microprocessors, and heat sinks as one assembly. After replacement, you must either update the system with the latest firmware or restore the pre-existing firmware that the customer provides on a diskette or CD image.

Note: See "System-board layouts" on page 7 for more information on the locations of the connectors, jumpers and LEDs on the system board.

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

1. Read the safety information that begins on page vii and "Installation guidelines" on page 141
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 143).
3. Remove the blade server cover (see "Removing the blade server cover" on page 145).
4. Remove the blade server bezel assembly (see "Removing the bezel assembly" on page 147).
5. Remove any of the installed components listed below from the system board; then, place them on a non-conductive surface or install them on the new system-board and chassis assembly.
   - I/O expansion card. See "Removing and installing an I/O expansion card" on page 153.
   - Hard disk drives. See "Installing a SAS hard disk drive" on page 150.
   - DIMMs. See "Removing a memory module" on page 151.
   - Battery. See "Removing the battery" on page 157.
6. Touch the static-protective package that contains the system-board and chassis assembly to any *unpainted* metal surface on the BladeCenter unit or any *unpainted* metal surface on any other grounded rack component; then, remove the assembly from its package.
7. Install any of the components listed below that were removed from the old system-board and chassis assembly.
   - I/O expansion card. See "Removing and installing an I/O expansion card" on page 153.
   - Hard disk drives. See "Installing a SAS hard disk drive" on page 150.
   - DIMMs. See "Installing a memory module" on page 152.
   - Battery. See "Installing the battery" on page 157.
8. Install the bezel assembly (see "Installing the bezel assembly" on page 148 for instructions).
9. Install the blade server cover (see "Installing the blade server cover" on page 146 for instructions).

10. Write the machine type, model number, and serial number of the blade server on the repair identification (RID) tag that comes with the replacement system-board and chassis assembly. This information is on the identification label that is behind the control-panel door on the front of the blade server.

    Important:

    - Completing the information on the RID tag ensures future entitlement for service.
    - The first time that you turn on the blade server after replacing the system-board and chassis assembly, the firmware code will prompt you to enter the blade-server serial number. If you enter an incorrect serial number, the operating system that you installed might not work correctly, and you might have to change your software-licensing agreement.

11. Place the RID tag on the bottom of the blade server chassis.
12. Install the blade server into the BladeCenter unit. See “Installing the blade server in a BladeCenter unit” on page 144 for instructions.
13. Turn on the blade server and establish an SOL session (see the *BladeCenter Serial Over LAN Setup Guide* for more information).

    The blade server start-up sequence begins and stops at progress code D100.
14. For each of the following prompts, enter the information indicated:

    `D100` > Enter the serial number of the blade server

    `D101` > Re-enter the serial number to verify.

    `D102` > Enter the machine type (7988 or 8844) of the blade server.

    `D103` > Re-enter the machine type to verify.

    `D104` > Enter the model number of the blade server.

    `D105` > Re-enter the model number to verify.
15. Reset the system date and time through the operating system that you installed. For additional information, see your operating-system documentation.

Chapter 5. Configuration information and instructions

This chapter provides information about updating the firmware and using the configuration utilities.

Updating the firmware

IBM periodically makes firmware updates available for the blade server. Use the following table to determine the methods you can use to install these firmware updates.

Important: To avoid problems and to maintain proper system performance, always ensure that the blade server BIOS, service processor, and diagnostic firmware levels are consistent for all blade servers within the BladeCenter unit.

You can download the latest firmware from the IBM Support Web site at http://www.ibm.com/systems/support/. Install the updated firmware using the following methods:

- To update the service processor (BMC) firmware, use the management-module Web interface (see the *BladeCenter Management Module User's Guide* for more information).
- To update the BIOS code, diagnostics, and firmware for the hard disk drive and hard disk drive controller, use the update tools that are provided with your operating system (see the documentation that comes with your operating system for more information).

Configuring the blade server

While the firmware is running POST and before the operating system loads, 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. The POST menu provides the following configuration utilities.

- **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 changing the boot list and setting the network parameters. The SMS utility can be used for AIX or Linux partitions. See "Using the SMS utility" on page 166 for more information.
- **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 found in the list.

  Note: This is the preferred method of loading standalone AIX diagnostics from CD.
- **Stored boot list**

  Use this utility to initiate a system boot in service mode using the customized service mode boot list that was set up by AIX when AIX was first booted, or manually using the AIX service aids.
- **Open firmware prompt**

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

Using the SMS utility

This section provides the instructions to start the SMS utility and descriptions of the menu choices.

Starting the SMS utility

Complete the following steps to start the SMS utility:

1. Turn on or restart the blade server, and establish an SOL session with it (see the *BladeCenter Management Module Command-Line Interface Reference Guide* or *BladeCenter Serial-Over-LAN Setup Guide* for more information.
2. When the POST menu and indicators are displayed, press the 1 key after the word *Keyboard* appears and before the word *Speaker* appears.
3. Follow the instructions on the screen.

SMS utility menu choices

The following choices are on the SMS utility main menu. Depending on the version of the firmware in the blade server, some menu choices might differ slightly from these descriptions.

- **Select Language**

  Select this choice to change the language used to display the SMS menus.
- **Setup Remote IPL (Initial Program Load)**

  Select this choice to enable and set up the remote startup capability of the blade server or partition.
- **Change SCSI Settings**

  Select this choice to view and change the addresses of the SCSI controllers attached to the blade server.
- **Select Console**

  Select this choice to select the console on which the SMS menus are displayed.
- **Select Boot Options**

  Select this choice to view and set various options regarding the installation devices and boot devices.

  Note: If a device you are trying to select (such as a USB CD drive in the BladeCenter media tray) is not displayed in the Select Device Type menu, select **List all Devices** and choose the device from that menu.
- **Firmware Boot Side Options**

  Select this choice to select the boot image (permanent or temporary) that will be used the next time the blade server is started.
- **Progress Indicator History**

  Select this choice to view the progress codes that were displayed on the console during the current startup, the previous startup, and the previous failover startup.

Configuring the Gigabit Ethernet controllers

Two Ethernet controllers are integrated on the blade server system board. Each controller provides a 1000-Mbps full-duplex interface for connecting to one of the Ethernet-compatible I/O modules in I/O-module bays 1 and 2, which enables simultaneous transmission and reception of data on the Ethernet local area network (LAN). Each Ethernet controller on the system board is routed to a different I/O module in I/O-module bay 1 or bay 2. The routing from an Ethernet controller to an I/O-module bay will vary according to the blade server type and the operating system that is installed. See “Blade server Ethernet controller enumeration” on page 168 for information about how to determine the routing from an Ethernet controller to an I/O-module bay for the blade server.

Note: Other types of blade servers, such as the BladeCenter HS20 Type 8678 blade server, that are installed in the same BladeCenter unit as the JS21 Type 7988 or 8844 blade server might have different Ethernet controller routing. See the documentation that comes with the other blade servers for information.

You do not have to set any jumpers or configure the controllers for the blade server operating system. However, you must install a device driver to enable the blade server operating system to address the Ethernet controllers. For device drivers and information about configuring the Ethernet controllers, see the *Broadcom NetXtreme Gigabit Ethernet Software* CD that comes with the blade server. For updated information about configuring the controllers, see http://www.ibm.com/systems/support/.

The Ethernet controllers in your blade server support failover, which provides automatic redundancy for the Ethernet controllers. Without failover, only one Ethernet controller can be connected from each server to each virtual LAN or subnet. With failover, you can configure more than one Ethernet controller from each server to attach to the same virtual LAN or subnet. Either one of the integrated Ethernet controllers can be configured as the primary Ethernet controller. If you have configured the controllers for failover and the primary link fails, the secondary controller takes over. When the primary link is restored, the Ethernet traffic switches back to the primary Ethernet controller. (See the operating-system device-driver documentation for information about configuring for failover.)

Important: To support failover on the blade server Ethernet controllers, the Ethernet switch modules in the BladeCenter unit must have identical configurations.

Creating a CE login

If the blade server is running an AIX operating system, it is recommended that a customer engineer (CE) login be created that enables a user to perform operating system commands that are required to service the system without being logged in as a root user. This login must have a role of Run Diagnostics and a primary group of System. This enables the user to:

- Run the diagnostics including the service aids, certify, and format.
- Run all the operating system commands run by system group users.
- Configure and unconfigure devices that are not in use.

In addition, this login can have Shutdown Group enabled to allow:

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

The recommended CE login user name is qserv.

Blade server Ethernet controller enumeration

The enumeration of the Ethernet controllers in a blade server is operating-system dependent. You can verify the Ethernet controller designations that a blade server uses through the operating-system settings.

The routing of an Ethernet controller to a particular I/O-module bay depends on the type of blade server. You can verify which Ethernet controller is routed to which I/O-module bay by using the following test:

1. Install only one Ethernet switch module or pass-thru module in I/O-module bay 1.
2. Make sure that the ports on the switch module or pass-thru module are enabled (click **I/O Module Tasks → Admin/Power/Restart** in the management-module Web interface).
3. Enable only one of the Ethernet controllers on the blade server. Note the designation that the blade server operating system has for the controller.
4. Ping an external computer on the network that is connected to the switch module or pass-thru module. If you can ping the external computer, the Ethernet controller that you enabled is associated with the switch module or pass-thru module in I/O-module bay 1. The other Ethernet controller in the blade server is associated with the switch module or pass-thru module in I/O-module bay 2.

If you have installed an I/O expansion card in the blade server, communications from the expansion card should be routed to I/O-module bays 3 and 4, if these bays are supported by your BladeCenter unit. You can verify which controller on the card is routed to which I/O-module bay by performing the same test and using a controller on the expansion card and a compatible switch module or pass-thru module in I/O-module bay 3 or 4.

Configuring a SAS RAID array

Configuring a SAS RAID array applies to a blade server in which two SAS hard disk drives are installed.

Two SAS hard disk drives in the blade server can be used to implement and manage RAID level-0 and RAID level-1 arrays in operating systems that are on the ServerProven list at http://www.ibm.com/servers/eserver/serverproven/compat/us/. For the blade server, you must configure the SAS RAID array using the *Standalone Diagnostics* CD.

Important: Depending on your RAID configuration, you must create the array *before* you install the operating system in the blade server.

Before you can create a RAID array, you must reformat the hard disk drives so that the sector size of the drives changes from 512 bytes to 528 bytes. If you later decide to remove the hard disk drives, delete the RAID array before you remove the drives.

Updating IBM Director

If you plan to use IBM Director to manage the blade server, you must check for the latest applicable IBM Director updates and interim fixes.

To install the IBM Director updates and any other applicable updates and interim fixes, complete the following steps.

Note: Changes are made periodically to the IBM Web site. The actual procedure might vary slightly from what is described in this document.

1. Check for the latest version of IBM Director:
   a. Go to http://www.ibm.com/servers/eserver/xseries/systems_management/xseries_sm/dwnl.html.
   b. If the drop-down list shows a newer version of IBM Director than what comes with the blade server, follow the instructions on the Web page to download the latest version.
2. Install IBM Director.
3. Download and install any applicable updates or interim fixes for the blade server:
   a. Go to http://www.ibm.com/systems/support/.
   b. Under **Product support**, click **BladeCenter**.
   c. Under **Popular links**, click **Software and device drivers**.
   d. Click **BladeCenter JS21** to display the matrix of downloadable files for the blade server.

Checking the status of the media tray

If you are installing the blade server in a BladeCenter unit other than a Type 8677 BladeCenter unit, this topic does not apply.

Important: If you received a Type 8677 BladeCenter unit before June 2003, the customer interface card (CIC) in the media tray of the BladeCenter unit might have to be replaced before the optical drive will work correctly with a JS21 Type 7988 or 8844 blade server.

If you received your Type 8677 BladeCenter unit before June 2003, start the management-module Web interface and complete the following steps to determine whether the CIC in your BladeCenter unit must be replaced:

1. In the navigation pane on the left side, select **Monitors**; then, select **Hardware VPD**.
2. In the BladeCenter Hardware VPD table in the right pane, find the row for module name Media Tray.
3. If the field replaceable unit (FRU) number for the media tray is 59P6629, have the CIC replaced before you install a JS21 Type 7988 or 8844 blade server in the BladeCenter unit.

To have the CIC replaced, call the IBM Support Center, report the CIC as a failed part, and request replacement with the latest CIC FRU. The IBM Support Center team will evaluate the problem, determine which replacement part is required, and send the applicable part. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378). In other countries, go to http://www.ibm.com/planetwide/ to locate your support telephone numbers. (Instructions for removing and replacing parts in the media tray of the BladeCenter unit are provided in the *BladeCenter Type 8677 Problem Determination and Service Guide* or *BladeCenter Type 8677 Hardware Maintenance Manual and Troubleshooting Guide*.)

Appendix A. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This appendix contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your BladeCenter product or optional device, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system. Information about diagnostic tools is in the *Hardware Maintenance Manual and Troubleshooting Guide* or *Problem Determination and Service Guide* on the IBM *Documentation* CD that comes with your system.
- Go to http://www.ibm.com/systems/support/ and click **BladeCenter** to check for information to help you solve the problem.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documentation that is provided with your IBM product. The documentation that comes with BladeCenter systems also describes the diagnostic tests that you can perform. Most BladeCenter systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the software.

Using the documentation

Information about your IBM BladeCenter system and preinstalled software, if any, or optional device is available in the documentation that comes with the product. That documentation can include printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/systems/support/ and follow the instructions. Also, some documents are available through the IBM Publications Center at http://www.ibm.com/shop/publications/order/.

Getting help and information from the World Wide Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM BladeCenter systems, optional devices, services, and support at http://www.ibm.com/systems/support/.

Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems with BladeCenter products. For information about which products are supported by Support Line in your country or region, see http://www.ibm.com/services/sl/products/.

For more information about Support Line and other IBM services, see http://www.ibm.com/services/, or see http://www.ibm.com/planetwide/ for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

Hardware service and support

You can receive hardware service through IBM Services or through your IBM reseller, if your reseller is authorized by IBM to provide warranty service. See http://www.ibm.com/planetwide/ for support telephone numbers, or in the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

In the U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9 a.m. to 6 p.m.

IBM Taiwan product service

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

IBM Taiwan product service contact information:
IBM Taiwan Corporation
3F, No 7, Song Ren Rd.
Taipei, Taiwan
Telephone: 0800-016-888

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product, and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

Active Memory	IBM	TechConnect
Active PCI	IBM (logo)	Tivoli
Active PCI-X	IntelliStation	Tivoli Enterprise
AIX	NetBAY	Update Connector
Alert on LAN	Netfinity	Wake on LAN
BladeCenter	Predictive Failure Analysis	XA-32
Chipkill	ServeRAID	XA-64
e-business logo	ServerGuide	X-Architecture
@server	ServerProven	XpandOnDemand
FlashCopy	System x	xSeries
i5/OS		

Intel, Intel Xeon, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Java and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Adaptec and HostRAID are trademarks of Adaptec, Inc., in the United States, other countries, or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Red Hat, the Red Hat “Shadow Man” logo, and all Red Hat-based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc., in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.

Important notes

Processor speeds indicate the internal clock speed of the microprocessor; other factors also affect application performance.

CD drive speeds list the variable read rate. Actual speeds vary and are often less than the maximum possible.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for approximately 1000 bytes, MB stands for approximately 1 000 000 bytes, and GB stands for approximately 1 000 000 000 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity may vary depending on operating environments.

Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard disk drive bays with the largest currently supported drives available from IBM.

Maximum memory may require replacement of the standard memory with an optional memory module.

IBM makes no representation or warranties regarding non-IBM products and services that are ServerProven, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

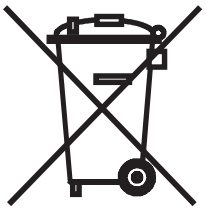
IBM makes no representations or warranties with respect to non-IBM products. Support (if any) for the non-IBM products is provided by the third party, not IBM.

Some software may differ from its retail version (if available), and may not include user manuals or all program functionality.

Product recycling and disposal

This unit must be recycled or discarded according to applicable local and national regulations. IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of product return programs and services in several countries to assist equipment owners in recycling their IT products. Information on IBM product recycling offerings can be found on IBM's Internet site at http://www.ibm.com/ibm/environment/products/prp.shtml.

Esta unidad debe reciclarse o desecharse de acuerdo con lo establecido en la normativa nacional o local aplicable. IBM recomienda a los propietarios de equipos de tecnología de la información (TI) que reciclen responsablemente sus equipos cuando éstos ya no les sean útiles. IBM dispone de una serie de programas y servicios de devolución de productos en varios países, a fin de ayudar a los propietarios de equipos a reciclar sus productos de TI. Se puede encontrar información sobre las ofertas de reciclado de productos de IBM en el sitio web de IBM http://www.ibm.com/ibm/environment/products/prp.shtml.



Notice: This mark applies only to countries within the European Union (EU) and Norway.

This appliance is labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as

applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

注意: このマークは EU 諸国およびノルウェーにおいてのみ適用されます。

この機器には、EU 諸国に対する廃電気電子機器指令 2002/96/EC(WEEE) のラベルが貼られています。この指令は、EU 諸国に適用する使用済み機器の回収とリサイクルの骨子を定めています。このラベルは、使用済みになった時に指令に従って適正な処理をする必要があることを知らせるために種々の製品に貼られています。

Remarque : Cette marque s'applique uniquement aux pays de l'Union Européenne et à la Norvège.

L'etiquette du système respecte la Directive européenne 2002/96/EC en matière de Déchets des Equipements Electriques et Electroniques (DEEE), qui détermine les dispositions de retour et de recyclage applicables aux systèmes utilisés à travers l'Union européenne. Conformément à la directive, ladite étiquette précise que le produit sur lequel elle est apposée ne doit pas être jeté mais être récupéré en fin de vie.

In accordance with the European WEEE Directive, electrical and electronic equipment (EEE) is to be collected separately and to be reused, recycled, or recovered at end of life. Users of EEE with the WEEE marking per Annex IV of the WEEE Directive, as shown above, must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and recovery of WEEE. Customer participation is important to minimize any potential effects of EEE on the environment and human health due to the potential presence of hazardous substances in EEE. For proper collection and treatment, contact your local IBM representative.

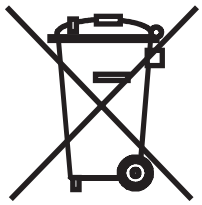
Battery return program

This product may contain a sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery. Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries outside the United States, go to http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml or contact your local waste disposal facility.

In the United States, IBM has established a return process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and battery packs from IBM equipment. For information on proper disposal of these batteries, contact IBM at 1-800-426-4333. Have the IBM part number listed on the battery available prior to your call.

For Taiwan: Please recycle batteries.

For the European Union:



Notice: This mark applies only to countries within the European Union (EU).

Batteries or packaging for batteries are labeled in accordance with European Directive 2006/66/EC concerning batteries and accumulators and waste batteries and accumulators. The Directive determines the framework for the return and recycling of used batteries and accumulators as applicable throughout the European Union. This label is applied to various batteries to indicate that the battery is not to be thrown away, but rather reclaimed upon end of life per this Directive.

Les batteries ou emballages pour batteries sont étiquetés conformément aux directives européennes 2006/66/EC, norme relative aux batteries et accumulateurs en usage et aux batteries et accumulateurs usés. Les directives déterminent la marche à suivre en vigueur dans l'Union Européenne pour le retour et le recyclage des batteries et accumulateurs usés. Cette étiquette est appliquée sur diverses batteries pour indiquer que la batterie ne doit pas être mise au rebut mais plutôt récupérée en fin de cycle de vie selon cette norme.

バッテリーあるいはバッテリー用のパッケージには、EU 諸国に対する廃電気電子機器指令 2006/66/EC のラベルが貼られています。この指令は、バッテリーと蓄電池、および廃棄バッテリーと蓄電池に関するものです。この指令は、使用済みバッテリーと蓄電池の回収とリサイクルの骨子を定めているもので、EU 諸国にわたって適用されます。このラベルは、使用済みになったときに指令に従って適正な処理をする必要があることを知らせるために種々のバッテリーに貼られています。

In accordance with the European Directive 2006/66/EC, batteries and accumulators are labeled to indicate that they are to be collected separately and recycled at end of life. The label on the battery may also include a chemical symbol for the metal concerned in the battery (Pb for lead, Hg for mercury, and Cd for cadmium). Users of batteries and accumulators must not dispose of batteries and accumulators as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and treatment of batteries and accumulators. Customer participation is important to minimize any potential effects of batteries and accumulators on the environment and human health due to the potential presence of hazardous substances. For proper collection and treatment, contact your local IBM representative.

For California:

Perchlorate material – special handling may apply. See http://www.dtsc.ca.gov/hazardouswaste/perchlorate/.

The foregoing notice is provided in accordance with California Code of Regulations Title 22, Division 4.5 Chapter 33. Best Management Practices for Perchlorate Materials. This product/part may include a lithium manganese dioxide battery which contains a perchlorate substance.

Electronic emission notices

Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the 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 Class A emission compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Australia and New Zealand Class A statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

United Kingdom telecommunications safety requirement

Notice to Customers

This apparatus is approved under approval number NS/G/1234/J/100003 for indirect connection to public telecommunication systems in the United Kingdom.

European Union EMC Directive conformance 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 nonrecommended 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 A Information Technology Equipment according to CISPR 22/European Standard EN

55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Community contact:
IBM Technical Regulations
Pascalstr. 100, Stuttgart, Germany 70569
Telephone: 0049 (0)711 785 1176
Fax: 0049 (0)711 785 1283
E-mail: tjahn@de.ibm.com

Taiwanese Class A warning statement

警告使用者:
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

Chinese Class A warning statement

中华人民共和国“A类”警告声明

声 明

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Japanese Voluntary Control Council for Interference (VCCI) statement

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

Index

F

H

I

J

K

L

M

N

O

P

R

S

T

U

V

W

Part Number: 49Y0169

Printed in USA

(1P) P/N: 49Y0169