BladeCenter JS21 Type 8844

Problem Determination and Service Guide

IBM

BladeCenter JS21 Type 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 153.

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)
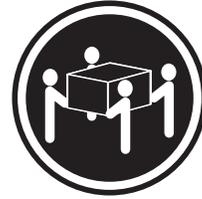
CAUTION:
Use safe practices when lifting.

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.

2

1
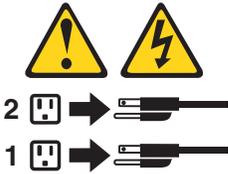
Statement 8:

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 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 is at http://www.ibm.com/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/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 Type 8844 blade server operating in a non-NEBS/ETSI (a non-Network Equipment Building System/European Telecommunications Standards Institute) environment.

Note: Power, cooling, removable-media drives, external ports, and advanced system management are provided by the BladeCenter unit.

Microprocessor:	Integrated functions:	Electrical input: 12 V dc

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
	• Two 1 Gigabit Ethernet controllers
	 • Expansion card interface
	 • Intelligent Platform Management Interface (IPMI)
	 • Baseboard management controller (BMC) with IPMI firmware
	 • ATI RN 50 video controller (future use)
	 • 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 and mouse (future use), diskette drive, and CD drive
	
	 Predictive Failure Analysis® (PFA) alerts:
	 • Microprocessor
	 • Memory
		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)

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 front-panel USB ports. The BladeCenter unit uses USB for internal communications with these devices.

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.
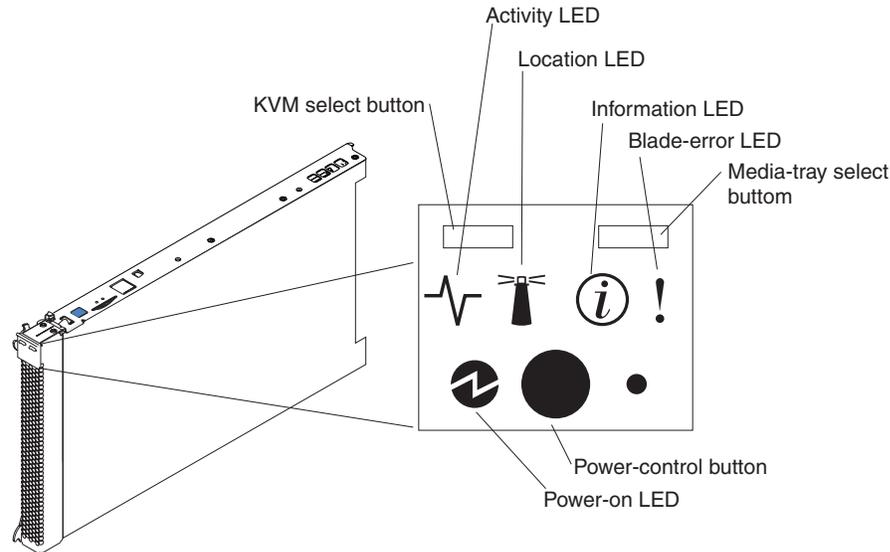
KVM select button: This function is not currently supported.

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 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 handshaking 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.

I/O expansion option (J18)
I/O expansion option (J22)
Blade expansion option (J200)
DIMM 1 (J400)
DIMM 2 (J401)
DIMM 3 (J402)
DIMM 4 (J403)
Hard disk drive 0 (J500)
Control panel (J4)
Hard disk drive 1 (J501)
Battery (BH1)
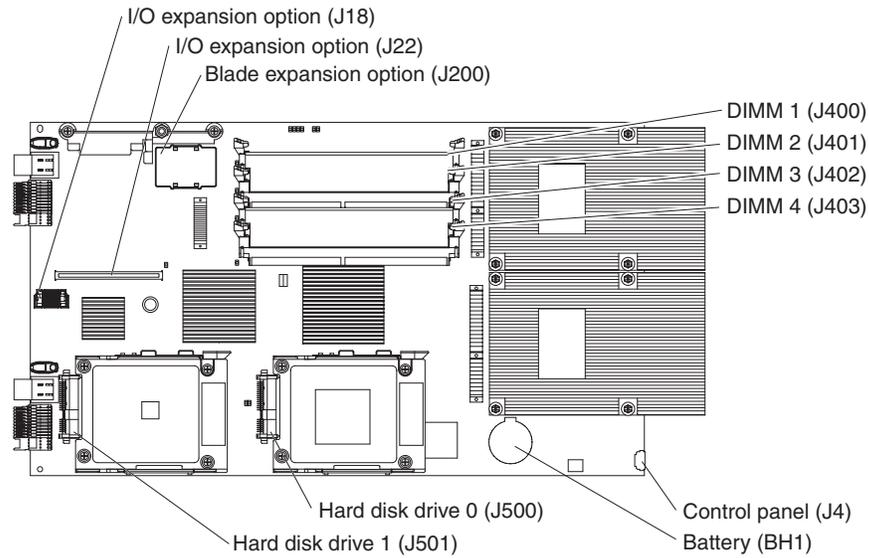
System-board jumpers

The following illustration shows the jumpers on the system board.

BIOS code page jumper (J14)

3
2
1
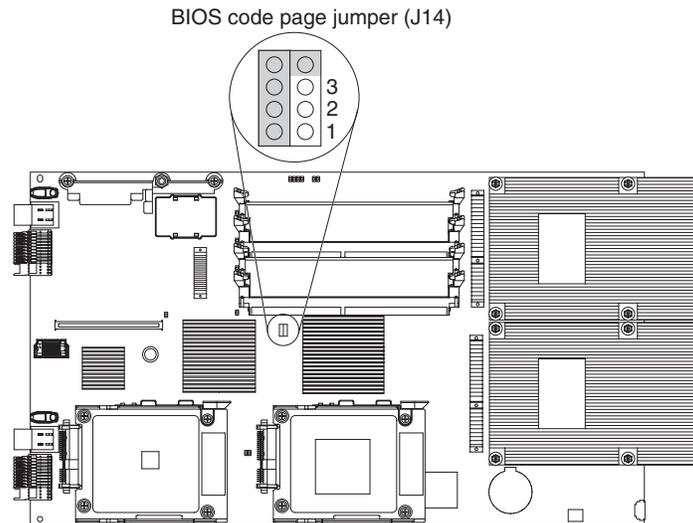
System-board LEDs

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.

DIMM 1 error LED (CR40)
DIMM 2 error LED (CR45)
DIMM 3 error LED (CR46)
DIMM 4 error LED (CR53)
I/O expansion option error LED (CR34)

System-management processor error LED (CR27)
NMI error LED (CR17)
Temperature error LED (CR16)
System board error LED (CR20)
Microprocessor 1 error LED (CR19)
Microprocessor 0 error LED (CR58)

Light path diagnostics switch (SW1)

Hard disk drive 1 error LED (CR3)
Hard disk drive 0 error LED (CR4)

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 151 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 103 for more information.

- **Light path diagnostics**

  Use the light path diagnostics to diagnose system errors quickly. See "Light path diagnostics" on page 111 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.

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 56).

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 31 and "Error codes" on page 33 for more information. A location code might be displayed at the same time on the second line (see "Location codes" on page 56).

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 146).

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 111 to identify the failing component.
2. For checkpoints with location codes, see "Location codes" on page 56.
3. For problems persisting after completing the suggested actions, see "Checkout procedure" on page 96 and "Solving undetermined problems" on page 117.
4. For eight-digit codes not listed here, see "Checkout procedure" on page 96.

- **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, Type 8844," on page 119 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 114. 2. Replace the system-board and chassis assembly.
C2001010	Startup source	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C20011FF	Partition resources added successfully	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2001200	Checking if startup is allowed	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20012FF	Partition startup is allowed to proceed	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2001300	Initializing ISL roadmap	1. Go to "Recovering the system firmware" on page 114. 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, Type 8844," on page 119 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
C20013FF	ISL roadmap initialized successfully	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2001400	Initializing SP Communication Area #1	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2001410	Initializing startup parameters	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20014FF	Startup parameters initialized successfully	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2002100	Power on racks	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2002110	Issuing a power on command	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C200211F	Power on command successful	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20021FF	Power on phase complete	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2002200	Begin acquiring slot locks	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20022FF	End acquiring slot locks	1. Go to "Recovering the system firmware" on page 114. 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, Type 8844," on page 119 to determine which components are CRUs and which components are FRUs.**
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Progress code	Description	Action
C2002300	Begin acquiring VIO slot locks	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20023FF	End acquiring VIO slot locks	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2002400	Begin powering on slots	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C20024FF	End powering on slots	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2002500	Begin power on VIO slots	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20025FF	End powering on VIO slots	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2003100	Validating ISL command parameters	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C2003112	Waiting for bus unit to become disabled	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
C2003115	Waiting for creation of bus object	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2003150	Sending ISL command to bus unit	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20031FF	Waiting for ISL command completion	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20032FF	ISL command complete successfully	1. Go to "Recovering the system firmware" on page 114. 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 114. 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 114. 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 114. 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 114. 2. Replace the system-board and chassis assembly.
C2004200	Load source device has enlisted	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2004300	Preparing connection to load source device	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
C20043FF	Load source device is connected	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C2006005	Clearing all partition main store	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C2006020	Verifying LID information	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2006030	Priming LP configuration LID	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C2006050	LP configuration LID primed successfully	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2006060	Waiting for LID load to complete	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2006100	LID load completed successfully	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
C2006200	Loading raw kernel memory image	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C2008040	Begin transfer slot locks to partition	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2008060	End transfer slot locks to partition	1. Go to "Recovering the system firmware" on page 114. 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 114. 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 114. 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 114. 2. Replace the system-board and chassis assembly.
C2008100	Initializing service processor communication area #2	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2008104	Loading data structures into main store	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2008110	Initializing event paths	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
C2008120	Starting processor(s)	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2008130	Begin associate of system ports	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C2008138	Associating system ports to the partition	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C200813F	End associate of system ports	1. Go to "Recovering the system firmware" on page 114. 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 114. 2. Replace the system-board and chassis assembly.
C2008200	Continue acknowledgement received from system firmware	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C20082FF	VSP startup complete successfully	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
C400E200	U4 I2C Master interface Initialization	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E201	Flash RAM CRC checksum is valid	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E202	MPIC initialization	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E203	Disabling TB	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
C400E204	CRC check of the image in RAM	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E206	Checking KCS interface for good communication with BMC	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E209	SIO/COM1/GPIO initialization	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E20A	Loading 256K flash code into L2 cache	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E20C	Finish Platform Hardware Probing. Process Firmware LID directory	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E20F	Executing from L2 cache	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E211	CRC check of the image in flash RAM	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E212	Getting CPU status and presence	1. Go to "Checkout procedure" on page 96. 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.

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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 96. 2. Replace the system-board and chassis assembly.
C400E218	Copying the set of flash RAM to memory	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
C400E21A	Executing code from memory	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E21B	Load PFW into memory	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E21C	Executing HT initialization	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E21D	Executing PCI initialization	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E21E	Execute I/O APIC test	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E220	Read 4K system VPD eeprom Data	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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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 96. 2. Replace the system-board and chassis assembly.
C400E231	Check CRC of a PHYPL LID	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
C400E23E	Checking a PHYPL LID size	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
C400E23F	Searching for a PHYPL LID	1. Go to "Checkout procedure" on page 96. 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 96. 3. Replace the system-board and chassis assembly.
CA000000	Process control now owned by partition firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
CA000020	Checking firmware levels	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
CA000032	Attempting to register lpevent queues	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000034	Attempting to exchange cap and allocate lpevents	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000038	Attempting to exchange virtual continue events	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000040	Attempting to obtain RTAS firmware details	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000050	Attempting to load RTAS firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000060	Attempting to obtain open firmware details	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000070	Attempting to load open firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000080	Preparing to start open firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA000090	Open firmware package corrupted (phase 1)	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA0000A0	Open firmware package corrupted (phase 2)	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
CA00D002	PCI adapter NVRAM hint created; system is rebooting	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00D003	PCI probing complete	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00D004	Beginning of install-console, loading GUI package	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00D008	Initialize console and flush queues	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00D00D	Evaluating NVRAM script	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 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 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E101	Create RTAS node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E102	Load and initialize RTAS	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E105	Transfer control to operating system (normal mode boot)	Go to "Boot problem resolution" on page 102.

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Progress code	Description	Action
CA00E10A	Load RTAS device tree	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E10B	Set RTAS device properties	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E130	Build device tree	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E134	Create memory node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E135	Create HCA node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E136	Create BSR node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E138	Create options node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E139	Create aliases node and system aliases	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E13A	Create packages node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E140	Loading operating system	Go to "Boot problem resolution" on page 102.
CA00E149	Create boot manager node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E14C	Create terminal emulator node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E14D	Load boot image	Go to "Boot problem resolution" on page 102.
CA00E150	Create host (primary) node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
CA00E151	Probing PCI bus	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E152	Probing for adapter FCODE; evaluate if present	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E153	End adapter FCODE probing and evaluation	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E154	Create PCI bridge node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E155	Probing PCI bridge secondary bus	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E156	Create plug-in PCI bridge node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E15B	Transfer control to operating system (service mode boot)	Go to "Boot problem resolution" on page 102.
CA00E15F	Adapter VPD evaluation	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E170	Start of PCI bus probe	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E172	First pass of PCI device probe	1. Go to "Checkout procedure" on page 96. 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 96.
		3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.

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Progress code	Description	Action

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 96.
		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 96.
		3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.

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 96.
		3. If no problems are found with bootp server or network, replace the system-board and chassis assembly.

CA00E17B	Microprocessor clock speed measurement	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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 96.
		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 96. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
CA00E19B	NVRAM menu? variable not found - assume FALSE	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E19D	Create NVRAM node	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 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 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E1A4	User requested boot to SMS menus	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1A5	User requested boot to open firmware prompt	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E1A7	User requested boot using customized service mode boot list	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1AA	System boot check for NVRAM settings	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1AB	System booting using default service mode boot list	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1AC	System booting using customized service mode boot list	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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Progress code	Description	Action
CA00E1AD	System booting to the operating system	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E1B1	System booting system-directed boot-device repair	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1B2	XOFF received, waiting for XON	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1B3	XON received	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E1B5	Checking for iSCSI disk aliases	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1D0	Create PCI SCSI node	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1D3	Create SCSI block device node (SD)	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1D4	Create SCSI byte device node (ST)	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1DC	Dynamic console selection	1. Go to "Checkout procedure" on page 96. 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, Type 8844," on page 119 to determine which components are CRUs and which components are FRUs.**
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Progress code	Description	Action
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 96. 3. Replace the system-board and chassis assembly.
CA00E1F0	Start out-of-box experience	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E1F2	Power on password prompt	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1F3	Privileged-access password prompt	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E1F5	Build boot device list	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1F6	Determine boot device sequence	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E1F7	No boot image located	Go to "Boot problem resolution" on page 102.
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 96. 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 96. 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 96. 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, Type 8844," on page 119 to determine which components are CRUs and which components are FRUs.**
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Progress code	Description	Action
CA00E1FB	Scan SCSI bus for attached devices	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 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 96. 2. Replace the system-board and chassis assembly.
CA00E440	Validate NVRAM, initialize partitions as needed	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E441	Generate /options node NVRAM configuration variable properties	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E442	Validate NVRAM partitions	1. Go to "Checkout procedure" on page 96. 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 96. 3. Replace the system-board and chassis assembly.
CA00E701	Create memory VPD	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E800	Initialize RTAS	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E810	Initializing ioconfig pfds	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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- **See Chapter 3, "Parts listing, Type 8844," on page 119 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
CA00E820	Initializing lpevent	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E830	Initializing event scan	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E840	Initializing hot plug	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E843	Initializing interface/aix access	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E850	Initializing dynamic reconfiguration	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E860	Initializing sensors	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E865	Initializing VPD	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E870	Initializing pfds memory manager	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E875	Initializing rtas_last_error	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E876	Initializing rtas_error_inject	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E877	Initializing dump interface	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E885	Initializing set-power-level	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E886	Initializing exit2c	1. Go to "Checkout procedure" on page 96. 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, Type 8844," on page 119 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
CA00E887	Initialize gdata for activate_firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E890	Starting to initialize open firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00E891	Finished initializing open firmware	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA00EAA1	Probe PCI-PCI bridge bus	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
CA060203	An alias was modified or created	1. Go to "Checkout procedure" on page 96. 2. 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 96. 3. 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, Type 8844," on page 119 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.
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 102.
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 102.
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 102.

- **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, Type 8844," on page 119 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
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.
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.
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/$setenv parameter error - the name contains a null character.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
AA170211	Setenv/$setenv parameter error - the value contains a null character.	1. Go to "Checkout procedure" on page 96. 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.

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.

In the following error codes, *X* and *Y* can be any number or letter.

Note: For problems persisting after completing the suggested actions, see "Checkout procedure" on page 96 and "Solving undetermined problems" on page 117.

- **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, Type 8844," on page 119 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
A2xxyyyy	Informational only.	No service action is required.
A7xx0102	System firmware detected an error. A machine check occurred during startup.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx0103	System firmware detected a failure	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
A7xx0104	System firmware failure. Machine check, undefined error occurred.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx0105	Platform LIC detected an error. More than one request to terminate the system was issued.	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
A7xx0106	System firwmare failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx0107	System firmware failure. The system detected an unrecoverable machine check condition.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx01F5	A processor failure has occurred	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx01F6	A memory failure has occurred	Replace the DIMM specified by the location code that is reported with the error code.
A7xx0302	System firmware failure	1. Go to "Recovering the system firmware" on page 114. 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.**
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- **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
A7xx0441	Service processor failure. The platform encountered an error early in the startup or termination process.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx0443	Service processor failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx0601	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.
A7xx0602	System firmware detected an error condition.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx0621	Informational system log entry only.	No corrective action is required.
A7xx0631	The hardware real-time clock has detected that the battery is low.	Replace the system battery.
A7xx0650	System firmware detected an error. Resource management was unable to allocate main storage. A platform dump was initiated.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx4400	There is a platform dump to collect	**Note:** If you are not having a problem, this is informational only and does not require any corrective action. 1. Use the method provided by your operating system to collect the platform dump. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
A7xx4401	System firmware failure. The system firmware detected an internal problem.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx4407	Informational only: system firmware has detected a platform dump	No corrective action is required.
A7xx4408	A platform dump has occurred. (The system issues this error code during the first startup after a dump is requested.)	**Note:** If you are not having a problem, this is informational only and does not require any corrective action. 1. Go to "Checkout procedure" on page 96. 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, Type 8844," on page 119 to determine which components are CRUs and which components are FRUs.**
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Error code	Description	Action
A7xx4409	A platform dump has occurred. A previous attempt to startup failed; the dump from the previous B7004408 error code has been lost.	**Note:** If you are not having a problem, this is informational only and does not require any corrective action. 1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xx5190	Operating system error. The server firmware detected a problem in an operating system.	1. Check for error codes in the partition that is reporting the error and take the appropriate actions for those error codes. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
A7xx5191	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. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
A7xx5300	System firmware detected a failure while partitioning resources. The platform partitioning code encountered an error.	1. Check the management module event log and the SMS progress indicator history for error codes; then, take the actions associated with those error codes. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
A7xx5301	User intervention required. The system detected a problem with the partition configuration.	Use the partition manager to reallocate the system resources.
A7xx5601	System firmware failure. There was a problem initializing, reading, or using system location codes.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xxF103	System firmware failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
A7xxF104	Operating system error. System firmware terminated a partition.	1. 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. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
A7xxF105	System firmware detected an internal error	1. 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. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx1150	During the startup of a partition, a partitioning configuration problem occurred. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Use the partition manager to make sure that the partitions that have been created are valid and correct. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx1230	During the startup of a partition, a partitioning configuration problem occurred; the partition is lacking the necessary resources to start up. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Use the partition manager to make sure that the partitions that have been created are valid and correct. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx1266	During the startup of a partition, the partition could not start up; you are attempting to start up an operating system that is not supported. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	Restart the blade server from a partition that has a supported operating system.
B2xx2250	During the startup of a partition, an attempt to toggle the power state of a slot has failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx2300	During the startup of a partition, an attempt to toggle the power state of a slot has failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx2310	During the startup of a partition, the partition firmware attempted an operation that failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
B2xx2320	During the startup of a partition, the partition firmware attempted an operation that failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx2425	During the startup of a partition, the partition firmware attempted an operation that failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx2426	During the startup of a partition, the partition firmware attempted an operation that failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx2475	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. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx2485	During the startup of a partition, the partition firmware attempted an operation that failed. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx3081	During the startup of a partition, the startup did not complete due to a copy error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx3125	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. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.

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- **See Chapter 3, "Parts listing, Type 8844," on page 119 to determine which components are CRUs and which components are FRUs.**
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Error code	Description	Action
B2xx6006	During the startup of a partition, a system firmware error occurred when the partition memory was being initialized; the startup will not continue. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx6012	During the startup of a partition, the partition LID failed to completely load into the partition main storage area. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx6027	During the startup of a partition, a failure occurred when allocating memory for an internal object used for firmware module load operations. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Make sure that: • The partition was allocated enough main storage • No memory leaks are present 2. Retry the operation. 3. Check for server firmware updates; then, install the updates if available. 4. Go to "Checkout procedure" on page 96. 5. Replace the system-board and chassis assembly.
B2xx690A	During the startup of a partition, an error occurred while copying open firmware into the partition load area. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8080	System log entry only.	No service action required.
B2xx8081	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. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8105	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. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 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, Type 8844," on page 119 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
B2xx8107	During the startup of a partition, there was a problem getting a segment of main storage in the blade server main storage. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8109	During the startup of a partition, a failure occurred; the startup will not continue. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	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. 3. Go to "Checkout procedure" on page 96. 4. Replace the system-board and chassis assembly.
B2xx8112	During the startup of a partition, a failure occurred; the startup will not continue. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8113	During the startup of a partition, an error occurred while mapping memory for the partition startup. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8114	During the startup of a partition, there was a failure verifying the VPD for the partition resources during startup. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8115	During the startup of a partition, there was a low level partition-to-partition communication failure. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8117	During the startup of a partition, the partition did not start up due to a system firmware error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
B2xx8121	During the startup of a partition, the partition did not start up due to a system firmware error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8123	During the startup of a partition, the partition did not start up due to a system firmware error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8125	During the startup of a partition, the partition did not start up due to a system firmware error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8127	During the startup of a partition, the partition did not start up due to a system firmware error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xx8129	During the startup of a partition, the partition did not start up due to a system firmware error. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xxA100 B2xxA101	A partition ended abnormally; the partition could not stay running and shut itself down. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check the error logs and take the actions for the error codes that are found. 2. Check for server firmware updates; then, install the updates if available. 3. Go to "Checkout procedure" on page 96. 4. Replace the system-board and chassis assembly.
B2xxB07B	System log entry only.	No service action required.
B2xxC1F0	An internal system firmware error occurred during a partition shutdown or a restart. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
B2xxD150	A partition ended abnormally; there was a communications problem between this partition and the code that handles resource allocation. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xxF003	During the startup of a partition, the partition processor(s) did not start the firmware within the time-out window. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xxF004 B2xxF005	A partition had a communications problem during a shutdown of the partition. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check for server firmware updates; then, install the updates if available. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B2xxF006	During the startup of a partition, the code load operation for the partition startup timed out. **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check the error logs and take the actions for the error codes that are found. 2. Check for server firmware updates; then, install the updates if available. 3. Go to "Checkout procedure" on page 96. 4. Replace the system-board and chassis assembly.
B2xxF007	During a shutdown of the partition, a time-out occurred while trying to stop a partition **Note:** The *xx* in B2xx is the partition ID (in decimal format) of the logical partition reporting the problem.	1. Check the error logs and take the actions for the error codes that are found. 2. Check for server firmware updates; then, install the updates if available. 3. Go to "Checkout procedure" on page 96. 4. 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 96. 2. 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 96. 2. Replace the system-board and chassis assembly.

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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 114. 2. Go to "Checkout procedure" on page 96. 3. 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 96. 2. Replace the system-board and chassis assembly.
B400BAD0 00000000	No DIMMs detected	1. Reseat the DIMMs and restart the blade server. 2. Go to "Checkout procedure" on page 96. 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 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
B400BADC 2B200X31	Processor x is faulty	Replace the 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.

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 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.

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Error code	Description	Action
B7xx0102	System firmware detected an error. A machine check occurred during startup.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx0103	System firmware detected a failure	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
B7xx0104	System firmware failure. Machine check, undefined error occurred.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx0105	Platform LIC detected an error. More than one request to terminate the system was issued.	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
B7xx0106	System firwmare failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx0107	System firmware failure. The system detected an unrecoverable machine check condition.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx01F5	A processor failure has occurred	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx01F6	A memory failure has occurred	Replace the DIMM specified by the location code that is reported with the error code.
B7xx0302	System firmware failure	1. Go to "Recovering the system firmware" on page 114. 2. Replace the system-board and chassis assembly.
B7xx0441	Service processor failure. The platform encountered an error early in the startup or termination process.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx0443	Service processor failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx0601	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.

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Error code	Description	Action
B7xx0602	System firmware detected an error condition.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx0621	Informational system log entry only.	No corrective action is required.
B7xx0631	The hardware real-time clock has detected that the battery is low.	Replace the system battery.
B7xx0650	System firmware detected an error. Resource management was unable to allocate main storage. A platform dump was initiated.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx4400	There is a platform dump to collect	**Note:** If you are not having a problem, this is informational only and does not require any corrective action. 1. Use the method provided by your operating system to collect the platform dump. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B7xx4401	System firmware failure. The system firmware detected an internal problem.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx4407	Informational only: system firmware has detected a platform dump	No corrective action is required.
B7xx4408	A platform dump has occurred. (The system issues this error code during the first startup after a dump is requested.)	**Note:** If you are not having a problem, this is informational only and does not require any corrective action. 1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx4409	A platform dump has occurred. A previous attempt to startup failed; the dump from the previous B7004408 error code has been lost.	**Note:** If you are not having a problem, this is informational only and does not require any corrective action. 1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xx5190	Operating system error. The server firmware detected a problem in an operating system.	1. Check for error codes in the partition that is reporting the error and take the appropriate actions for those error codes. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
B7xx5191	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. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B7xx5300	System firmware detected a failure while partitioning resources. The platform partitioning code encountered an error.	1. Check the management module event log and the SMS progress indicator history for error codes; then, take the actions associated with those error codes. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B7xx5301	User intervention required. The system detected a problem with the partition configuration.	Use the partition manager to reallocate the system resources.
B7xx5601	System firmware failure. There was a problem initializing, reading, or using system location codes.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xxF103	System firmware failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
B7xxF104	Operating system error. System firmware terminated a partition.	1. 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. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
B7xxF105	System firmware detected an internal error	1. 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. 2. Go to "Checkout procedure" on page 96. 3. Replace the system-board and chassis assembly.
BA000010	The device data structure is corrupted	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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Error code	Description	Action
BA000030	An lpevent communication failure occurred	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA000032	The firmware failed to register the lpevent queues	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
BA000038	The firmware failed to exchange virtual continuation events	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 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 96. 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 96. 2. Replace the system-board and chassis assembly.
BA010000	There is insufficient information to boot the system	1. Go to "Checkout procedure" on page 96. 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.
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.

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Error code	Description	Action
BA030011	RTAS attempt to allocate memory failed	1. Go to "Checkout procedure" on page 96. 2. 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 96. 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 96. 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 96. 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.
BA040040	Setting the machine type, model, and serial number failed.	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 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 96. 2. Replace the system-board and chassis assembly.
BA050004	Failed to locate service processor device tree node.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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Error code	Description	Action
BA05000A	Failed to send boot failed message	1. Go to "Checkout procedure" on page 96. 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 102.
BA06000C	A pointer to the operating system was found in non-volatile storage.	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
BA060021	The environment variable "boot-device" contained more than five entries.	1. Go to "Checkout procedure" on page 96. 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 96. 3. Replace the system-board and chassis assembly.

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Error code	Description	Action
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 96. 4. Replace the system-board and chassis assembly.

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 96.
		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 96.
		3. Replace the system-board and chassis assembly.

BA07xxxx	SCSI controller failure	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA090001	SCSI DASD: test unit ready failed; hardware error	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
BA090003	SCSI DASD: send diagnostic failed; sense data available	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA090004	SCSI DASD: send diagnostic failed: devofl cmd	1. Go to "Checkout procedure" on page 96. 2. 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 96. 2. Replace the system-board and chassis assembly.

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Error code	Description	Action
BA120002	On an undetermined SCSI device, test unit ready failed; sense data available	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 2. 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 96. 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 96. 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 96. 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 96. 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 96. 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, Type 8844," on page 119 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 96. 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.
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.
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 96. 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.
BA170000	NVRAMRC initialization failed; device test failed	1. Go to "Checkout procedure" on page 96. 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 96. 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 96. 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 96. 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 96. 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, Type 8844," on page 119 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
BA170210	Setenv/$Setenv parameter error - name contains a null character	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA170211	Setenv/$Setenv parameter error - value contains a null character	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA170998	NVRAMRC script evaluation error - command line execution error.	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA180008	PCI device Fcode evaluation error	1. Go to "Checkout procedure" on page 96. 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 96. 4. Replace the system-board and chassis assembly.
BA180010	PCI probe error, bridge in freeze state	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA180011	PCI bridge probe error, bridge is not usable	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA180012	PCI device runtime error, bridge in freeze state	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA180101	Stack underflow from fibre-channel adapter	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
BA201001	The serial interface dropped data packets	1. Go to "Checkout procedure" on page 96. 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, Type 8844," on page 119 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
BA201002	The serial interface failed to open	1. Go to "Checkout procedure" on page 96. 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 96. 2. Replace the system-board and chassis assembly.
BA210000	Partition firmware reports a default catch	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA210001	Partition firmware reports a stack underflow was caught	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA210002	Partition firmware was ready before standout was ready	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
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 96. 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 96. 2. Replace the system-board and chassis assembly.
BA210101	The partition firmware error log queue is full	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
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.
BA278005	Failed to flash a firmware update lid	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, Type 8844," on page 119 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
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.
BA280000	RTAS discovered an invalid operation that may cause a hardware error	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.
BA290000	RTAS discovered an internal stack overflow	1. Go to "Checkout procedure" on page 96. 2. Replace the system-board and chassis assembly.

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 94).

Notes:

1. If the SRN does not appear in the table, see "Solving undetermined problems" on page 117.
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 94 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 94 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 96.
111-108		An encoded SRN was displayed. Action: Go to "Performing the checkout procedure" on page 96.
111-121		There is a display problem. Action: Go to "Performing the checkout procedure" on page 96.
111-78C	227	PCI adapter I/O bus problem. Action: Go to "Performing the checkout procedure" on page 96. Perform "Solving undetermined problems" on page 117.
111-999	210	System does not perform a soft reset. Action: Go to "Performing the checkout procedure" on page 96.
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 96.
651-151	152 2E2	Sensor indicates a voltage is outside the normal range. Go to "Performing the checkout procedure" on page 96.
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 96.
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 96.
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 96.
651-603	2C6 2C7	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
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 96.
651-623	2C6	Correctable error threshold exceeded Action: Go to "Performing the checkout procedure" on page 96.
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 96.

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 96.
651-65A	2CE	ECC correctable error. Action: Go to "Performing the checkout procedure" on page 96.
651-65B	2CC	ECC correctable error. Action: Go to "Performing the checkout procedure" on page 96.
651-664	302	Correctable error threshold exceeded. Action: Go to "Performing the checkout procedure" on page 96.
651-665	303	Correctable error threshold exceeded. Action: Go to "Performing the checkout procedure" on page 96.
651-666	304	Correctable error threshold exceeded. Action: Go to "Performing the checkout procedure" on page 96.
651-669	2CD	Correctable error threshold exceeded. Action: Go to "Performing the checkout procedure" on page 96.
651-66A	2CE	Correctable error threshold exceeded. Action: Go to "Performing the checkout procedure" on page 96.
651-66B	2CC	Correctable error threshold exceeded. Action: Go to "Performing the checkout procedure" on page 96.
651-674	302	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
651-675	303	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
651-676	304	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
651-679	2CD	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
651-67A	2CE	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
651-67B	2CC	Failed memory module. Action: Go to "Performing the checkout procedure" on page 96.
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 96.
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 96.
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 96.
651-721	2C6 2C7 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
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 96.
651-781	2C7 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-784	302 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-785	303 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-786	304 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-789	2CD 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-78A	2CE 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-78B	2CC 214	Uncorrectable memory error. Action: Go to "Performing the checkout procedure" on page 96.
651-809		Power fault warning due to unspecified cause. Action: Go to "Performing the checkout procedure" on page 96.
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 96.

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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.

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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
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 96.
25C4-701	25C4	Permanent adapter failure. Go to "Performing the checkout procedure" on page 96.
25C4-601	25C4	Download firmware error. Go to "Performing the checkout procedure" on page 96.
25C4-602	25C4	EEPROM read error. Go to "Performing the checkout procedure" on page 96.
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 117
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 101).

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 107 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 103 and "Solving undetermined problems" on page 117.
- 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 117.
- If device errors occur, see "Troubleshooting tables" on page 103.

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 a serial over LAN (SOL) session; then continue to Step 002 . If the blade server does not start, see "Troubleshooting tables" on page 103.

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 31 or "Error codes" on page 33.
3. If the firmware displays a service request number (SRN), see "SRN tables" on page 57.

4. Check the BladeCenter management module event log. If an error was recorded by the system, see "Attention codes" on page 31 or "Error codes" on page 33.

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 117.

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 98. Record any diagnostic results and see the "SRN tables" on page 57 to identify the failing component.

     Note: When replacing a component, perform system verification for the component (see "Using the diagnostics program" on page 101).

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 99 or "Starting standalone diagnostics from a NIM server" on page 100.

6. If you have replaced the failing component, perform system verification for the component (see "Using the diagnostics program" on page 101

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 99 or "Starting standalone diagnostics from a NIM server" on page 100.

Can you load the standalone diagnostics?

No   Go to "Solving undetermined problems" on page 117.

Yes   Select the resources to be tested and record any SRNs; then go to "SRN tables" on page 57.

This ends the Linux procedure.

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 147 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 101 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 101 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 102; 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 102; 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 101 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 98, "Starting standalone diagnostics from a CD" on page 99, or "Starting standalone diagnostics from a NIM server" on page 100.

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 57 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 57 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 96.

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 you cannot find the problem in these tables, see "Running the diagnostics program" on page 98 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, Type 8844," on page 119 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, Type 8844," on page 119 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, Type 8844," on page 119 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, Type 8844," on page 119 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, Type 8844," on page 119 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

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, Type 8844," on page 119 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, Type 8844," on page 119 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.

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, Type 8844," on page 119 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 117.

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, Type 8844," on page 119 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, Type 8844," on page 119 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 117.

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, Type 8844," on page 119 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 117, 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, Type 8844," on page 119 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, Type 8844," on page 119 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 122.

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.

DIMM 1 error LED (CR40)
DIMM 2 error LED (CR45)
DIMM 3 error LED (CR46)
DIMM 4 error LED (CR53)
I/O expansion option error LED (CR34)

System-management processor error LED (CR27)
NMI error LED (CR17)
Temperature error LED (CR16)
System board error LED (CR20)
Microprocessor 1 error LED (CR19)
Microprocessor 0 error LED (CR58)

Light path diagnostics switch (SW1)

Hard disk drive 1 error LED (CR3)
Hard disk drive 0 error LED (CR4)

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, Type 8844," on page 119 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, Type 8844," on page 119 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.)

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 123).
3. Remove the blade-server cover (see "Removing the blade server cover" on page 125).
4. Locate the BIOS code page jumper (J14) on the system board (see "System-board jumpers" on page 7).
5. Move the jumper to pins 2 and 3 to enable system firmware recovery mode.
6. Replace the cover (see "Installing the blade server cover" on page 126), reinstall the blade server in the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124), and restart the blade server.

   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.

7. If the blade server starts up and displays the operating-system prompt, see "Recovering the TEMP image from the PERM image" on page 115 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 114).

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 114, restart the blade server.

5. If you moved jumper J14 as described in "Starting the PERM image" on page 114, 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 123).

   c. Remove the blade-server cover (see "Removing the blade server cover" on page 125).

   d. Locate the BIOS code page jumper (J14) on the system board (see "System-board jumpers" on page 7).

   e. Move the jumper to pins 1 and 2.

   f. Replace the cover (see "Installing the blade server cover" on page 126), reinstall the blade server in the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124), and restart the blade server.

      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.

   g. Verify that the system starts from the TEMP image (see "Verifying the system firmware levels" on page 116).

   You might need to update the firmware code to the latest version. See "Updating the firmware" on page 145 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 98).
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 98).
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 undetermined problems

Note: When you are diagnosing a problem in the JS21 Type 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 151 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, Type 8844

The following replaceable components are available for the JS21 Type 8844 blade server, models 31X and 51X.
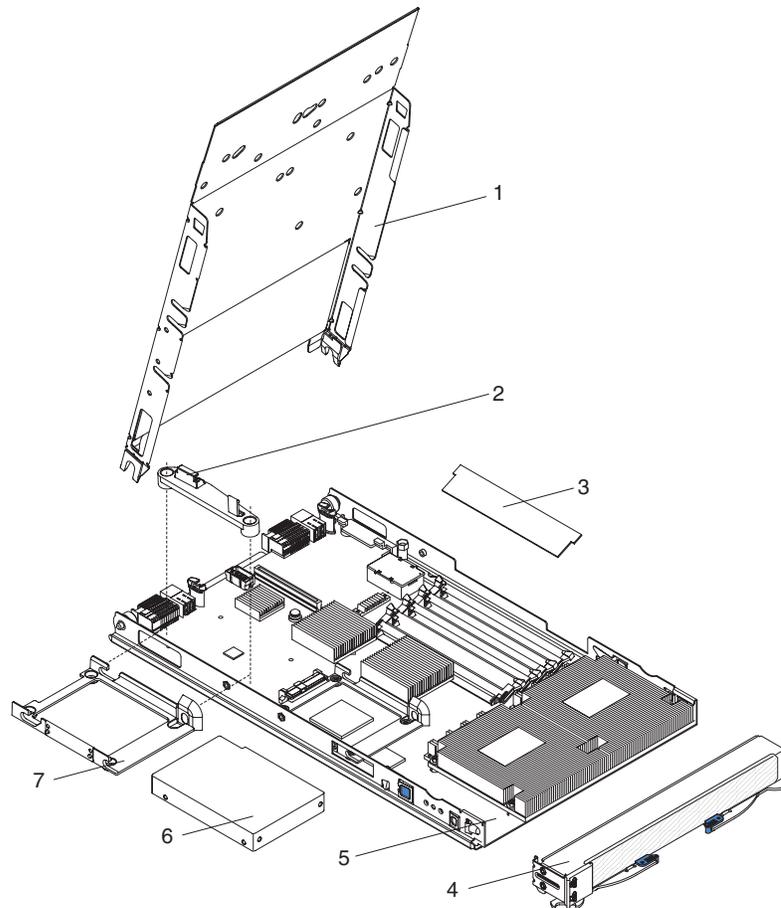
Replaceable components are of three types:

- **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	32R2432		
2	Bracket, expansion	32R2451		
3	Memory, 1 GB DDR2, 400 MHz (model 51X)	39M5808		
3	Memory, 1 GB DDR2, 533 MHz (model 51X)	41Y2710		
3	Memory, 2 GB DDR2, 400 MHz (option)	39M5811		
3	Memory, 2 GB DDR2, 533 MHz (option)	41Y2714		
3	Memory, 4 GB DDR2, 400 MHz (option)	41Y2702		
3	Memory, 512 MB DDR2, 400 MHz (model 31X)	39M5820		
3	Memory, 512 MB DDR2, 533 MHz (option)	41Y2706		
4	Bezel assembly	32R2435		
5	System-board and chassis assembly, with 2 PPC970MP dual-core microprocessors (model 51X)		32R2429	
5	System-board and chassis assembly, with 2 PPC970MP single-core microprocessors (model 31X)		32R2428	
6	Hard disk drive, 36.4 GB SAS (option)	26K5778		
6	Hard disk drive, 73.4 GB SAS (option)	26K5779		
7	Tray, SAS hard disk drive	31R2239		
	Battery, 3.0 volt	33F8354		
	Ethernet expansion card (option)	13N2306		
	Fibre channel expansion card (option)	26K4859		
	Fibre channel expansion card, 2 Gb (option)	26R0836		
	Fibre channel expansion card (option)	26R0837		
	Infiniband expansion card (option)	26K6459		
	iSCSI expansion card (option)	26K6490		
	Myrinet expansion card (option)	32R1845		
	Kit, miscellaneous		32R2451	
	Label, FRU list	32R2434		
	Label, system service	32R2433		

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, Type 8844," on page 119 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 122. 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.
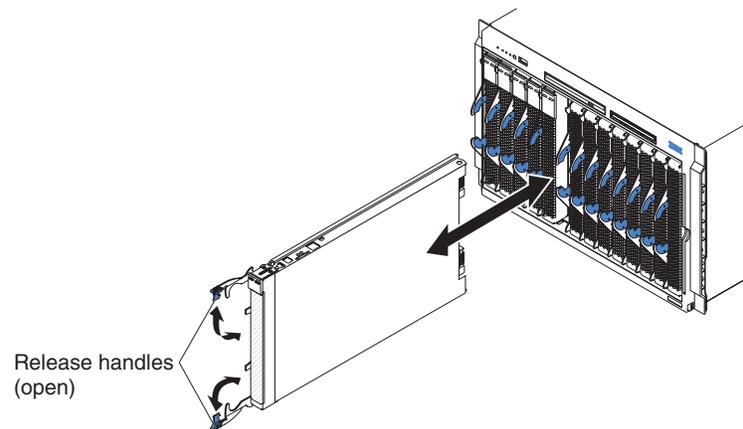
Release handles (open)

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121 through "Handling static-sensitive devices" on page 122.
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 6 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.
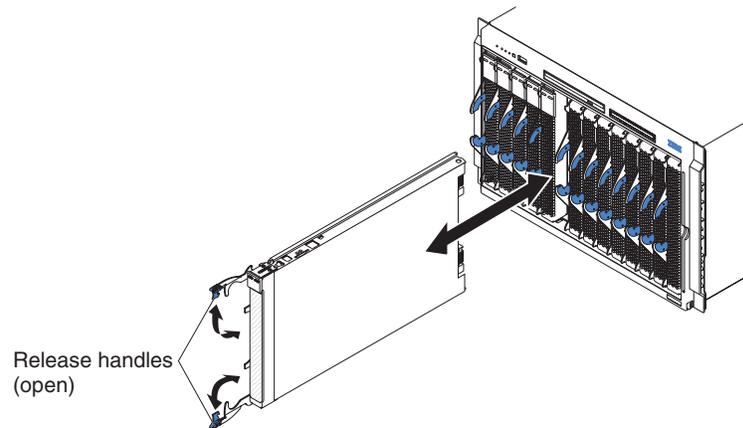
Release handles (open)

**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.
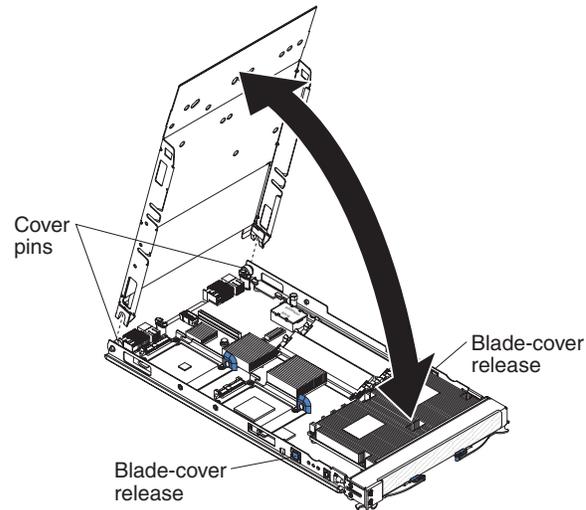
1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Press the blade-cover release on each side of the blade server 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.
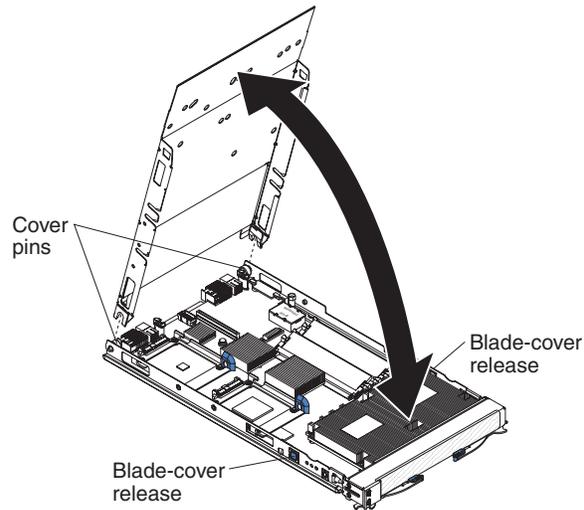
Statement 21:

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 124).

Removing the bezel assembly

To remove the bezel assembly, complete the following steps.
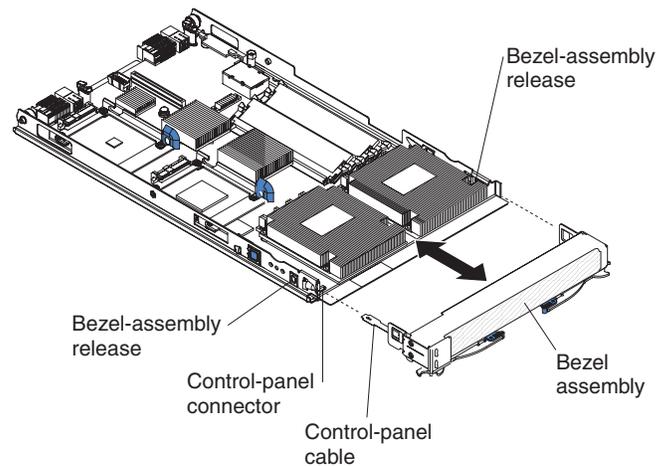
Bezel-assembly release

Bezel-assembly release

Control-panel connector

Control-panel cable

Bezel assembly

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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.
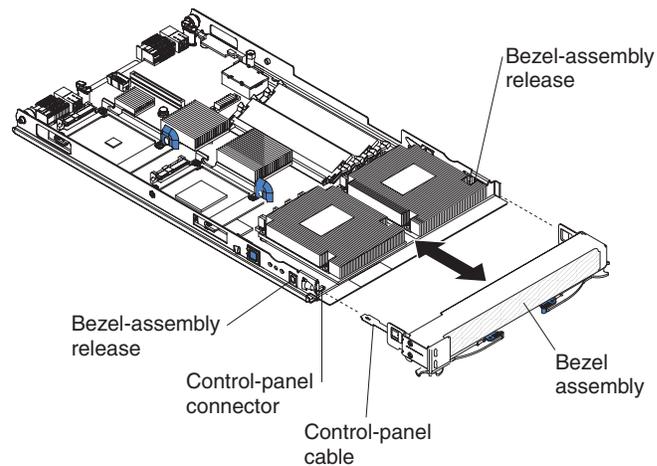
1. Connect the control-panel cable to the control-panel connector on the system board.
2. Carefully slide the bezel assembly onto the blade server until it clicks into place.
3. Install the blade server cover (see "Installing the blade server cover" on page 126).
4. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

Removing a SAS hard disk drive

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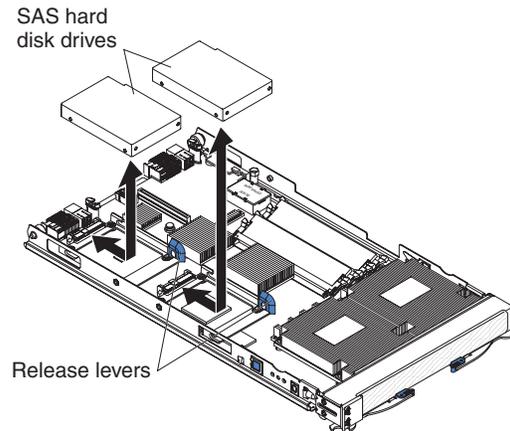
SAS hard
disk drives

Release levers

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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.

SAS hard
disk drives

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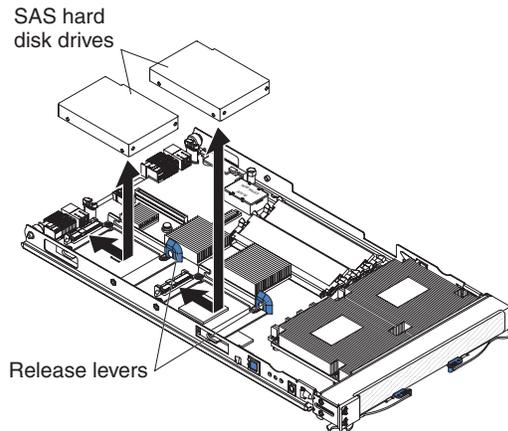
1. Identify the location in which the hard disk drive will be installed.

   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 126).

4. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

Removing a memory module

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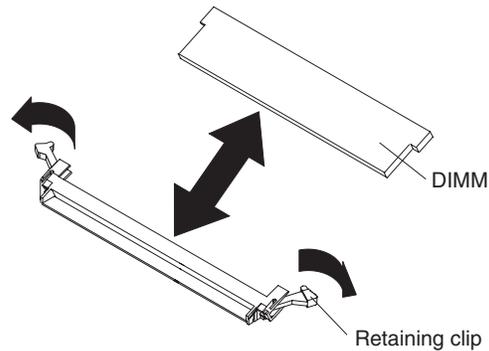
DIMM

Retaining clip

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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.

DIMM

Retaining clip
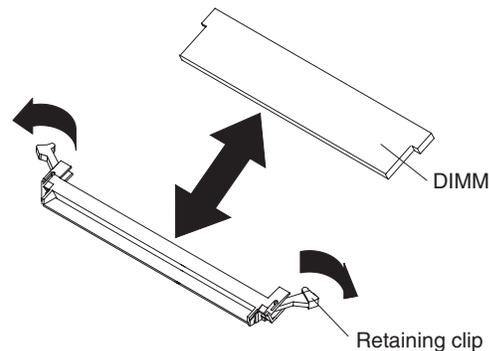
1. Read the documentation that comes with the DIMMs.
2. Locate the DIMM connector into which the DIMM will be installed (see "System-board connectors" on page 7 for DIMM slot locations).
3. Touch the static-protective package that contains the DIMM to any *unpainted* metal surface on the BladeCenter 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 126).
8. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

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.
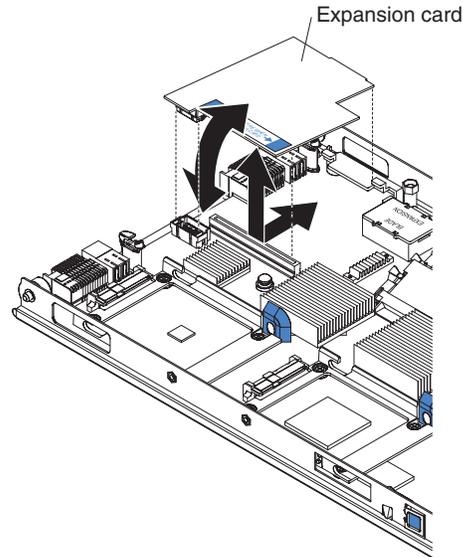
Expansion card

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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.
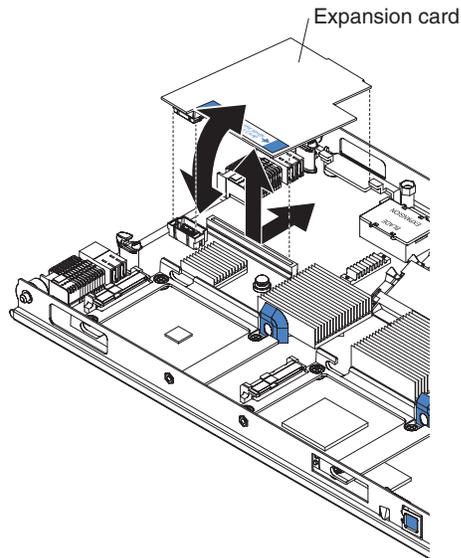
Expansion card

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 126).
5. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

Removing a standard-form-factor expansion card

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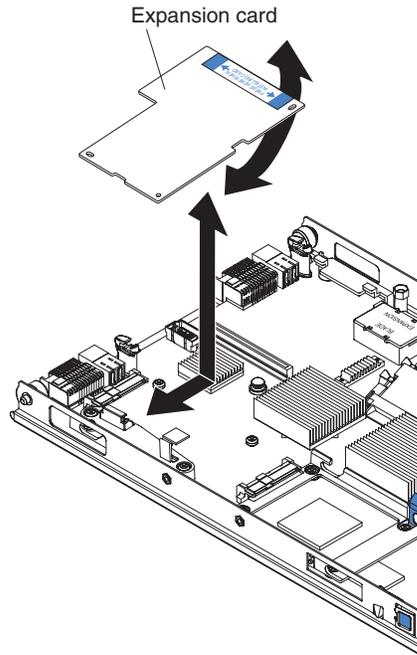
Expansion card

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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.
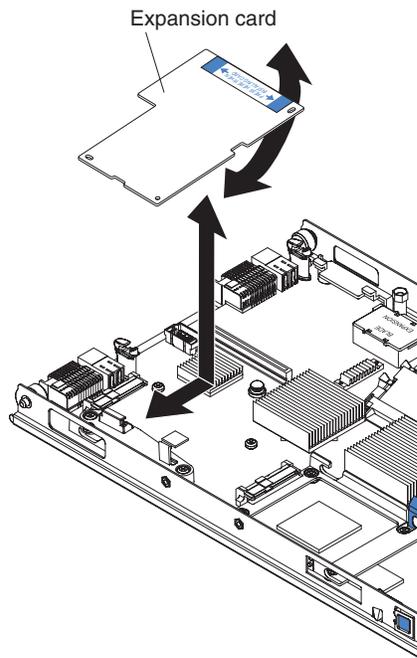
Expansion card

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 125).

4. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

Removing the battery
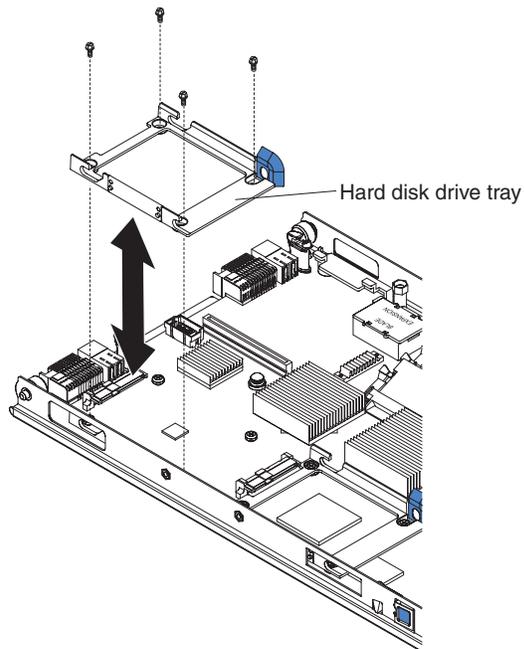
To remove the battery, complete the following steps.
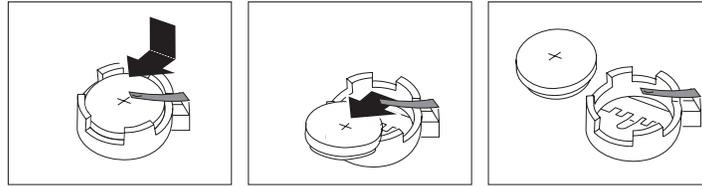
1. Read the safety information that begins on page vii and "Installation guidelines" on page 121
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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.
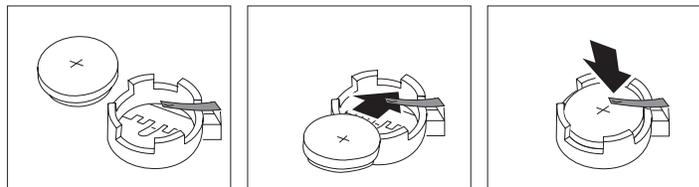
1. Follow any special handling and installation instructions that come with the battery.
2. Tilt the battery so that you can insert it into the socket, under the battery clip. Make sure that the side with the positive (+) symbol is facing up.
3. As you slide it under the battery clip, press the battery down into the socket.
4. Install the blade server cover (see "Installing the blade server cover" on page 126).
5. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).
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 "SMS utility menu choices" on page 146 for more information).

Removing a hard disk drive tray

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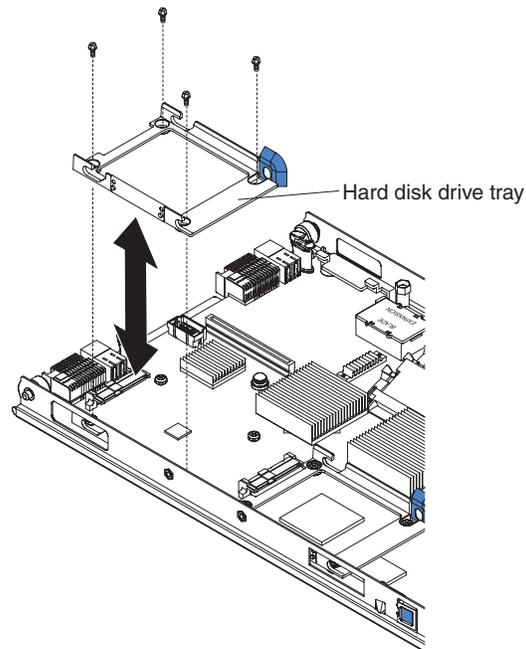
Hard disk drive tray

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
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 129).
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.

Hard disk drive tray

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 130 for instructions).
3. Install the blade server cover (see "Installing the blade server cover" on page 126).
4. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

Removing the expansion bracket

To remove the expansion bracket, complete the following steps.
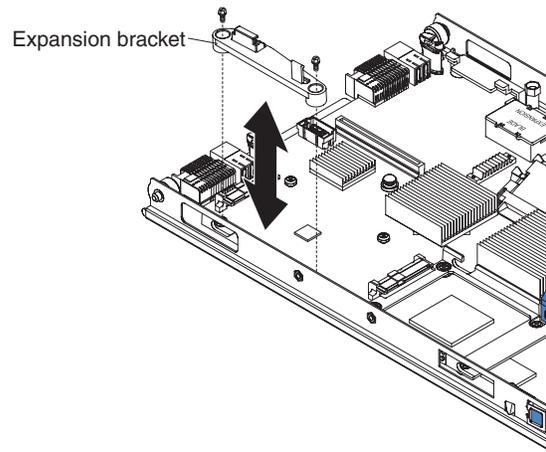
Expansion bracket

1. Read the safety information that begins on page vii and "Installation guidelines" on page 121.
2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).
3. Remove the blade server cover (see "Removing the blade server cover" on page 125).
4. If a standard-form-factor expansion card is installed, remove it (see "Removing a standard-form-factor expansion card" on page 135).
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.
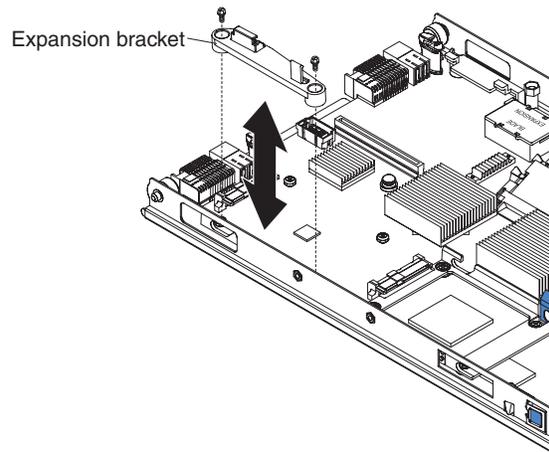
Expansion bracket

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 136).
3. Install the blade server cover (see "Installing the blade server cover" on page 126).
4. Install the blade server into the BladeCenter unit (see "Installing the blade server in a BladeCenter unit" on page 124).

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 121

2. If the blade server is installed in a BladeCenter unit, remove it (see "Removing the blade server from a BladeCenter unit" on page 123).

3. Remove the blade server cover (see "Removing the blade server cover" on page 125).

4. Remove the blade server bezel assembly (see "Removing the bezel assembly" on page 127).

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 133.
   - Hard disk drives. See "Installing a SAS hard disk drive" on page 130.
   - DIMMs. See "Removing a memory module" on page 131.
   - Battery. See "Removing the battery" on page 137.

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 133.
   - Hard disk drives. See "Installing a SAS hard disk drive" on page 130.
   - DIMMs. See "Installing a memory module" on page 132.
   - Battery. See "Installing the battery" on page 137.

8. Install the bezel assembly (see "Installing the bezel assembly" on page 128 for instructions).

9. Install the blade server cover (see "Installing the blade server cover" on page 126 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 124 for instructions.

13. Start a Serial-Over-LAN (SOL) session with the blade server; then power on the blade server (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 (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/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 146 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.

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.

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 148 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 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/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.

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 through the optional ServeRAID™ Manager program.

The IBM *ServeRAID Support* CD contains the ServeRAID Manager program, which you can use to configure the hard disk drives for use with the SAS controller. For details about using these programs, see the documentation on the IBM *ServeRAID Support* CD.

Important: Depending on your RAID configuration, you must create the array *before* you install the operating system in the blade server. See the IBM *ServeRAID Support* CD for more information.

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 MB to 528 MB. If you later decide to remove the hard disk drives, delete the RAID array before you remove the drives. If you decide to delete the RAID array and reuse the hard disk drives, you must reformat the drives so that the sector size of the drives changes from 528 MB to 512 MB.

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/support/.
   b. Click **Downloads and drivers**.
   c. From the **Category** list, select **BladeCenter (Blades)**.
   d. From the **Select by system** list, locate **BladeCenter JS21**. Next to **BladeCenter JS21**, click **Hardware only** or the operating system that is on the blade server: **AIX** or **Linux**.
   e. In the **Search within results** field, type `director` and click **Search**.
   f. Select any applicable update or interim fix that you want to download.
   g. Click the link for the executable (.exe) file to download the file, and follow the instructions in the readme file to install the update or interim fix.
   h. Repeat steps 3f and 3g for any additional updates or interim fixes that you want to install.

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 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 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/bladecenter/ and click **Support** 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/bladecenter/, click **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/bladecenter/. For service information, click **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.

Appendix B. Notices

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Important notes

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

CD-ROM 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.

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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 contains materials such as circuit boards, cables, electromagnetic compatibility gaskets, and connectors which may contain lead and copper/beryllium alloys that require special handling and disposal at end of life. Before this unit is disposed of, these materials must be removed and recycled or discarded according to applicable regulations. IBM offers product-return programs in several countries. Information on product recycling offerings can be found on IBM's Internet site at http://www.ibm.com/ibm/environment/products/prp.shtml.

IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of programs and services to assist equipment owners in recycling their IT products. Information on product recycling offerings can be found on IBM's Internet site at http://www.ibm.com/ibm/environment/products/prp.shtml.

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.

In the Netherlands, the following applies.

For Taiwan: Please recycle batteries.

廢電池請回收

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