Bull ESCALA EPC400

Setting Up the System

ORDER REFERENCE
86 A1 18PX 02

Bull ESCALA EPC400

Setting Up the System

Hardware

July 1998

BULL ELECTRONICS Angers
CEDOC
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FRANCE

ORDER REFERENCE
86 A1 18PX 02

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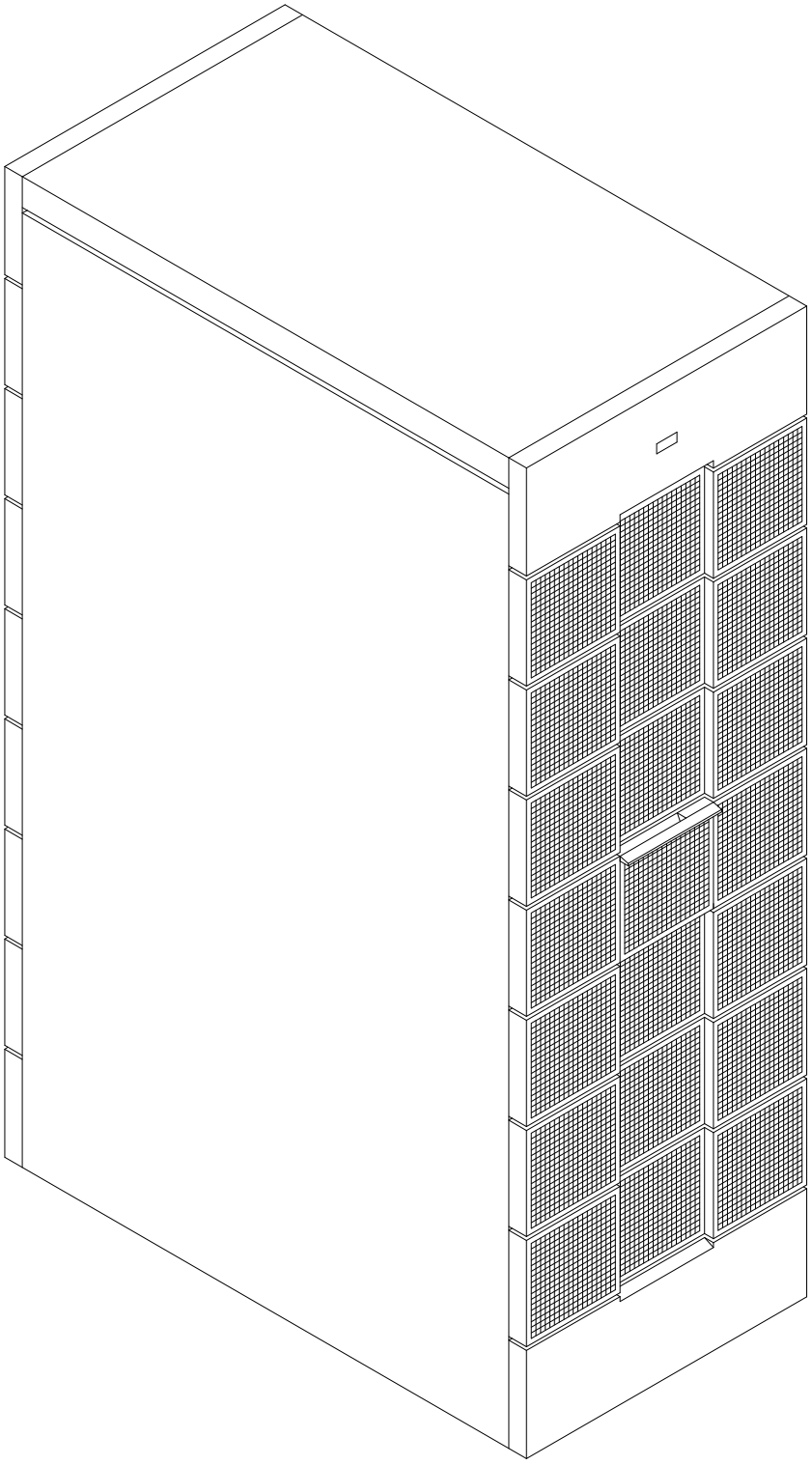
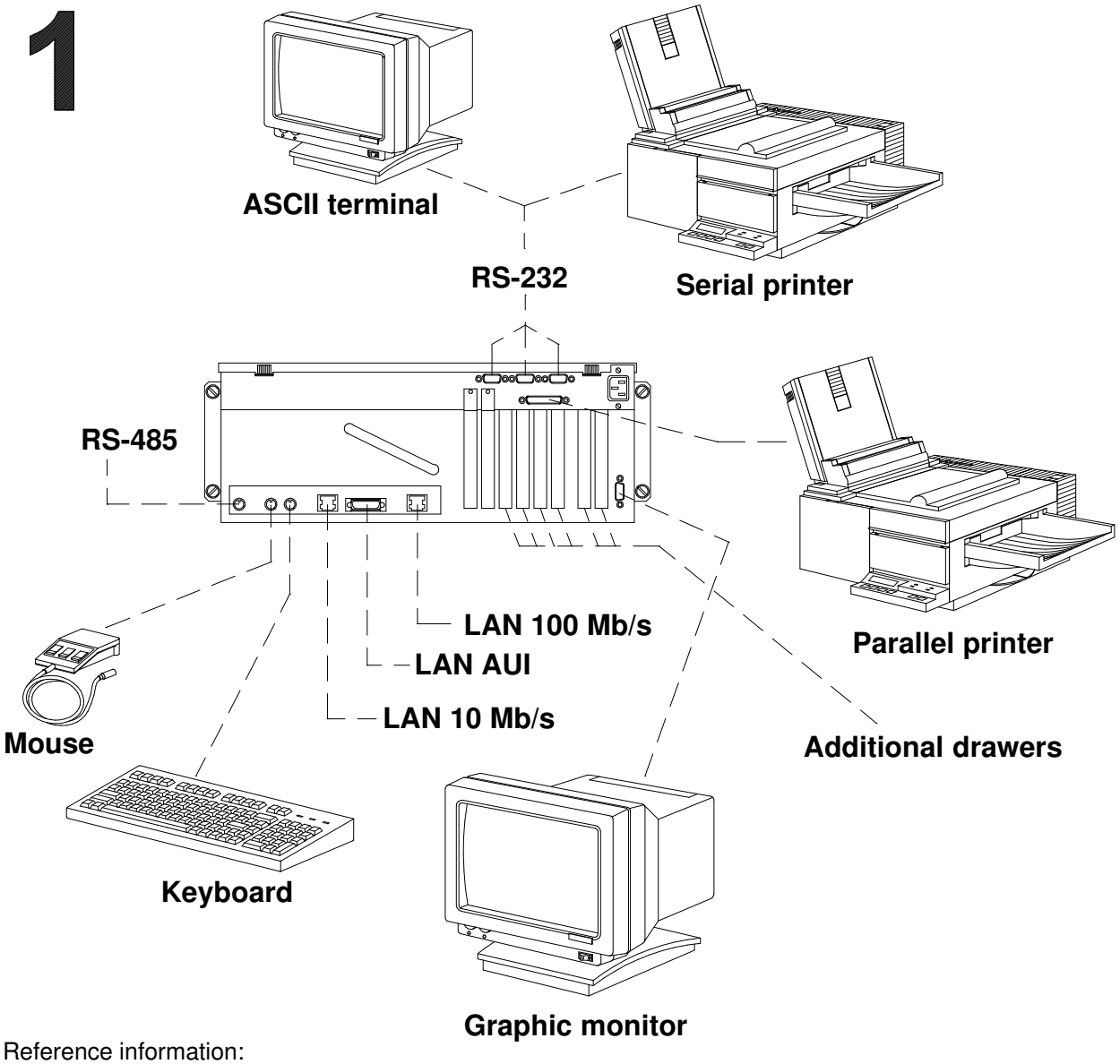


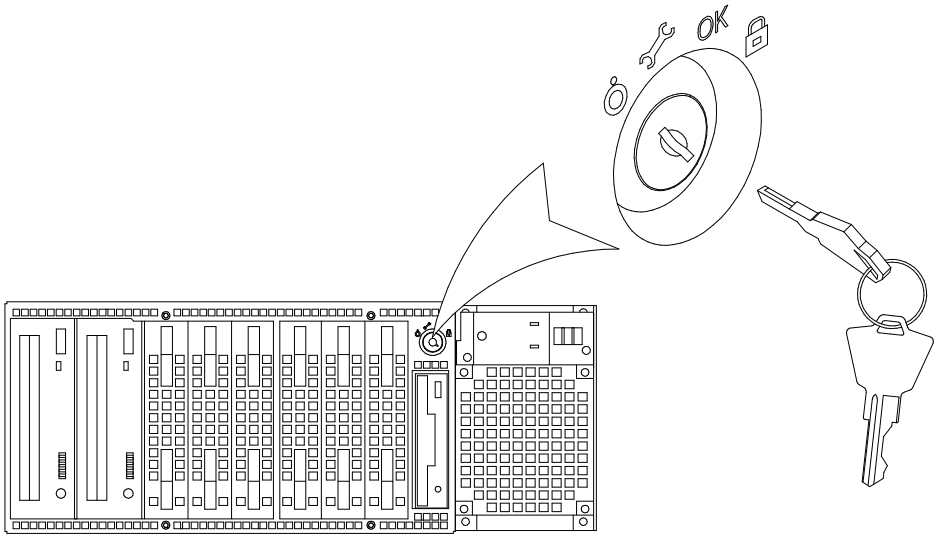
System Setup Roadmap

1



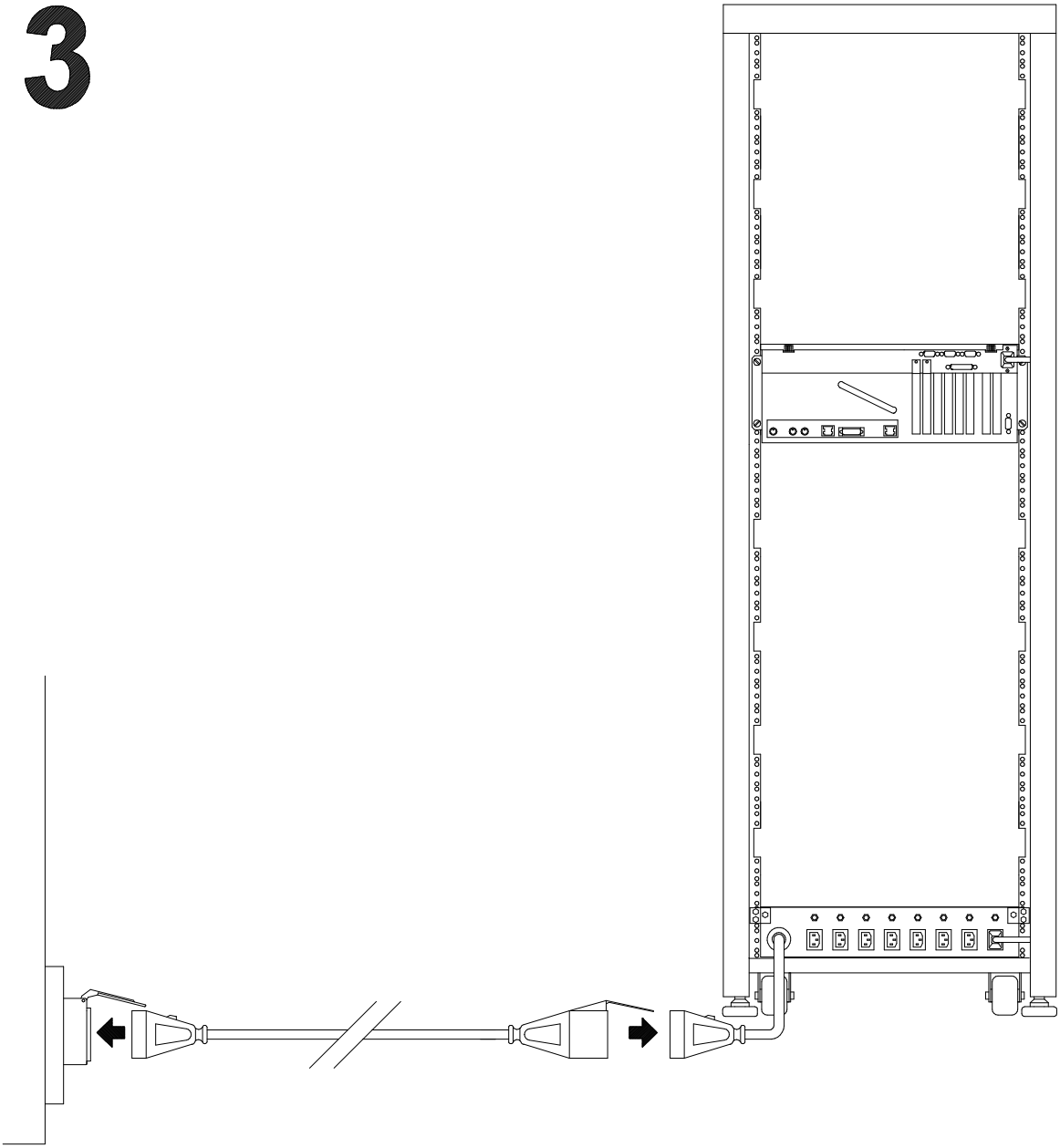
Reference information:
Connecting Devices, on page 2-1

2



Reference information:
Inserting the Key, on page 2-6

3



Reference information:
Connecting the Power Cords, on page 2-7

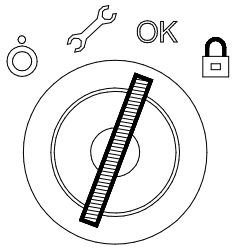
4

Check the software status for your system (pre-installed, not-installed).

- If the *Preload Report* sheet has been supplied with the system, the software is pre-installed. Skip to step 5.
- If the *Preload Report* sheet is not supplied with the system, the software is not-installed. Refer to the *AIX Installation Guide*.

Reference information:
Checking the Software Status, on page 2-10

5



Reference information:
First Startup of a Pre-Installed System, on page 2-11

Table of Contents

Communication Statements

The following statements apply to this product. The statements for other products intended for use with this product appears in their accompanying manuals.

Federal Communications Commission (FCC) Statement

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

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Neither the provider or the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

EC Council Directive

This product is in conformity with the protection requirements of the following EC Council Directives:

- 89/336/EEC and 92/31/EEC (for the electromagnetic compatibility)
- 73/23/EEC (for the low voltage)
- 93/68/EEC (for CE marking).

Neither the provider nor the manufacturer can accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards not supplied by the manufacturer.

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with IEC Standard 950.

Avis de conformité aux normes du ministère des Communications du Canada

Cet appareil numérique de la classe A respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

Canadian Department of Communications Compliance Statement

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

VCCI Statement

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

The following is the translation of the VCCI Japanese statement in the box above.

This is a Class A product based on the standard of the Voluntary Control Council for Interferences by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Safety Notices

Definitions of Safety Notices

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury.

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

A *warning* notice indicates an action that could cause damage to a program, device, system, or data.

Placement of Safety Notices Inside This Manual

System safety notices which do not refer to a specific situation are included in these pages. Any specific safety notices are mentioned inside this manual whenever these must be observed during system operating or handling.

IT Power Systems

This equipment has been designed also for connection to IT Power Systems.

Disconnect Device - Rack (Isolation from Primary Power)

To remove the primary power from the rack, unplug the PDU input plug from the power source.

Disconnect Device - CPU and PCI Expansion Drawers (Isolation from Primary Power)

To remove the primary power from the CPU and PCI expansion drawers, unplug the “Appliance Coupler” from the relevant PDU outlet.

Laser Safety Information

Note: The Optical Link Card (OLC) referred to in this information is part of the Serial Optic Channel Converter assembly.

This system may contain a laser product called the Optical Link Card (OLC). In the U.S., the OLC is certified as a Class 1 laser product that conforms to the requirements contained in the Department of Health and Human Services (DHHS) regulation 21 CFR Subchapter J. Internationally, the OLC is certified as a Class 1 laser product that conforms to the requirements contained in the International Electrotechnical Commission (IEC) standard 825 (1984), the Verband Deutscher Elektrotechniker (VDE) standard 0837 (1986), and the CENELEC (European Committee for Electrotechnical Standardization) Harmonization Document HD 482 S1 (1988). The German testing institute VDE assigned a certificate of conformity to DIN IEC 825/VDE 0837/02.86 and CENELEC HD 482 S1/03.88; the certificate registration number is 3642.

In addition, Statens Provningsanstalt (Swedish National Testing Institute) tested and approved the OLC for use in Sweden as a Class 1 laser product and assigned the approval number SP LA 89:184. The CDRH certification label and the VDE certificate of conformity mark are located on the plastic retainer of the OLC product. The figure shows the system Class 1 information label required by IEC 825.

Class 1 laser products are not considered to be hazardous. The OLC internally contains a gallium aluminum arsenide (GaAlAs) semiconductor laser diode emitting in the wavelength range of 770 to 800 nanometers. This laser diode is a Class 3B laser that is rated at 5.0 milliwatts. The design of the OLC is such that access to laser radiation above a Class 1 level during operation, user maintenance, or service conditions is prevented.

The Optical Link Card (OLC) must only be connected to another OLC or a compatible laser product. Any compatible laser product must contain the open fiber link detection and laser control safety system used in OLC. This is a requirement for correct operation of the optical link. In addition, the OLC product is designed and certified for use in applications with point-to-point optical links only. Using this product in any other type of optical link configuration (for example, links containing optical splitters or star couplers) is considered as not using the product correctly and may require that the user certify the laser product again for conformance to the laser safety regulations.

What We Do to Protect the Environment

Your new computer system is implemented following some principles aimed to reduce risks and harm to the environment, considering the impact that products can have during their life cycle: production, transport, installation, use at customer site and disposal at end of life.

- Only materials free from dangerous or polluting additives are used (e.g. polybrominated free material)
- All plastic parts are marked in order to correctly address the recycling operations
- The unit is designed taking into account the requirements for disassembly, largest parts are made of homogeneous material to facilitate recycling and, where possible, sub-assemblies are designed to be reused
- Packing is designed with the intent to reduce environmental impacts
- The unit itself does not produce polluting or dangerous emissions (lubricant, solvent, or other dangerous/polluting substances are not present in the unit)
- Production processes use water-based materials (e.g. paint). For electronic sub-assemblies, either hydro-soluble fluxes (Freon free) or no clean processes are used.

About This Guide

Audience

This guide is for the people in charge of the first setup of the system.

How to Use This Guide

The primary goal of this guide is to explain what to do when the system arrives.

- Chapter 1, *Knowing Your New System*, describes the system documentation set and the system features.
- Chapter 2, *CPU Drawer Setup Procedure*, includes any procedures needed to setup the system and start it for the first time.
- Chapter 3, *Starting and Stopping the System*, explains how to power on and power off the system.
- Chapter 4, *What to Do When a Problem Occurs*, includes some common problems that can arise when working with the system, and the related solutions.
- Appendix A, *System Specifications*, gives a description of the system specifications and standards.

Related Publications

- *Site Preparation for Rack Systems*, details the environmental and electrical characteristics of the site where the rack must be installed.
- *Hardware Tasks: Where do I find the Information I Need?*, is a hardware task roadmap which helps you find the task related information inside the documentation kit.
- *Using the System*, provides information about system operability, use of installed devices and maintainability services, both for the CPU drawer and the PCI expansion drawer. Moreover, system upgrading in terms of memory, CPU's, controllers and devices is described.
- *Configuring the System*, provides information about the CPU drawer, the PCI expansion drawer and the rack configuration rules. Examples of SCSI configurations are included. This manual is addressed to system administrators and people trained to perform service tasks on the system, in charge of the system configuration.
- *CPU Drawer Service Guide*, provides the description of the CPU drawer hardware components and the instructions for their removal and installation. This guide is addressed to people trained to perform service tasks on the system.
- *Rack Service Guide*, includes the description of the supported drawers and the procedures to install and remove them. This guide is addressed to people trained to perform service tasks on the system.
- *Maintenance Guide*, provides information about the system initialization process, the system firmware and configuration variables, and the system features in terms of reliability, availability and serviceability (RAS). It includes also information about the maintenance tools provided with the system for diagnostic purposes, such as offline tests, system status indicators (tracing and error codes), remote maintenance, both for the CPU drawer and the PCI expansion drawer. This guide is addressed to people trained to perform service tasks on the system.
- *PCI Expansion Drawer Quick Set Up*, contains the step by step hardware procedures for a quick set up of the PCI expansion drawer.

- *PCI Expansion Drawer Service Guide*, provides the description of the PCI expansion drawer hardware components and the instructions for their removal and installation. This guide is addressed to people trained to perform service tasks on the system.
- *AIX Installation Guide*, provides detailed instructions for the AIX installation.
- *Disks and Tapes Configuration Information*, describes the setting of addresses and switches for both disk and tape drives. It also includes information on CD-ROM drive settings.
- *Terminals and Printers Configuration Guide*, describes how to configure terminals, printers and LAN terminal concentrators.
- *Terminal and Printer Connections*, describes how to connect a terminal or a printer that is not supplied with the system.

Chapter 1. Knowing Your New System

This chapter explains the first things to do after having received the system; it also describes the available system documentation and provides a simple overview of the system features.

- ❑ **Unpacking and Inspecting the System**
- ❑ **System Documentation**
- ❑ **System Features Overview**

Unpacking and Inspecting the System

CAUTION:
To avoid possible injury while moving the system, ask another person to help you.

Move the system to the area you have chosen, according to the required environmental and technical characteristics.

Note: It is assumed that the site has already been properly prepared, as described in the *Site Preparation for Rack Systems* manual. If it is not so, check the instructions given in the guide and execute any required operations, before proceeding with the system setup.

If not yet done, carefully unpack the system and components, following the instructions on the shipping box. Save all packing materials so that you can repack the system in case you ever need to move or ship it.

Your system was checked and carefully packed before it left the manufacturer.

Contact your authorized supplier or marketing representative if any items seem to be damaged or if you think that something is missing.

System Documentation

The system is shipped with a set of hardware and software manuals, which lead users in setting up, operating, upgrading the system and installing software.
These manuals constitute the basic documentation kit.

Additional documentation is delivered according to the specific products your system is equipped with.

Some manuals are on paper only, some ones are both on paper and on CD-ROM, while other ones are on CD-ROM only. For information on online documentation, which is delivered on CD-ROM, see **Online Documentation**, below.

For detailed information about the system specific documentation, please refer to the *Hardware Tasks: Where Do I Find the Information I Need?* booklet, delivered with your system.

Maintenance Kit

A maintenance kit including a specific set of paper documentation is available at any authorized supplier. It is addressed to both service people and trained customers who are in charge of the system maintenance.

For a detailed list of the manuals included in the maintenance kit, please refer to the *Hardware Tasks: Where Do I Find the Information I Need?* booklet.

Online Documentation

Most of the system documentation is provided in online format. This includes both hardware and software documentation.

Online documentation offers you several advantages:

- You can find the information you need quickly, automatically jumping from one documentation topic to the others, simply clicking with your mouse on the desired topic
- You can access the information you need from any workstation or terminal connected to your system, with no need to have paper documentation at hand
- In case you need it, you can print the selected topic.

Refer to the documentation CD-ROM booklet for information on online documentation use.

System Features

The following paragraphs help you become familiar with the system, providing information about the supported features, the front and rear presentation of the CPU drawer and PCI expansion drawer.

CPU Drawer Features

The following list summarizes the features provided by the CPU drawer:

Integrated Features

- Two Fast-20 Wide-16 SCSI single ended (SE) embedded controllers
- One LAN (AUI and RJ-45) controller at 10M bits and 100M bits (RJ-45)
- One video graphics adapter (SVGA) with internal power save control
- Three RS-232 standard communication lines
- One parallel port
- One mouse port
- One keyboard port
- One EIA-485 communication line, for drawer interconnection
- Support for an integrated modem using one ISA port.

Disk Devices

- Up to 6 x 1-inch high or 4 x 1.6-inch high hard disks.

Media Devices

- One floppy diskette drive
- Up to 2 media devices, such as CD-ROM, 4 mm/8 mm tape, QIC tape.

PCI/ISA Controllers

- Up to 8 PCI/ISA cards (5 PCI cards + 2 PCI/ISA cards + 1 ISA card).

Memory

- From 128M bytes to 512M bytes on the system planar
- From 128M bytes to 3G bytes on memory risers.

CPU's

- Up to 4 CPU cards.

Operating System

- AIX 4.2 and AIX 4.3.

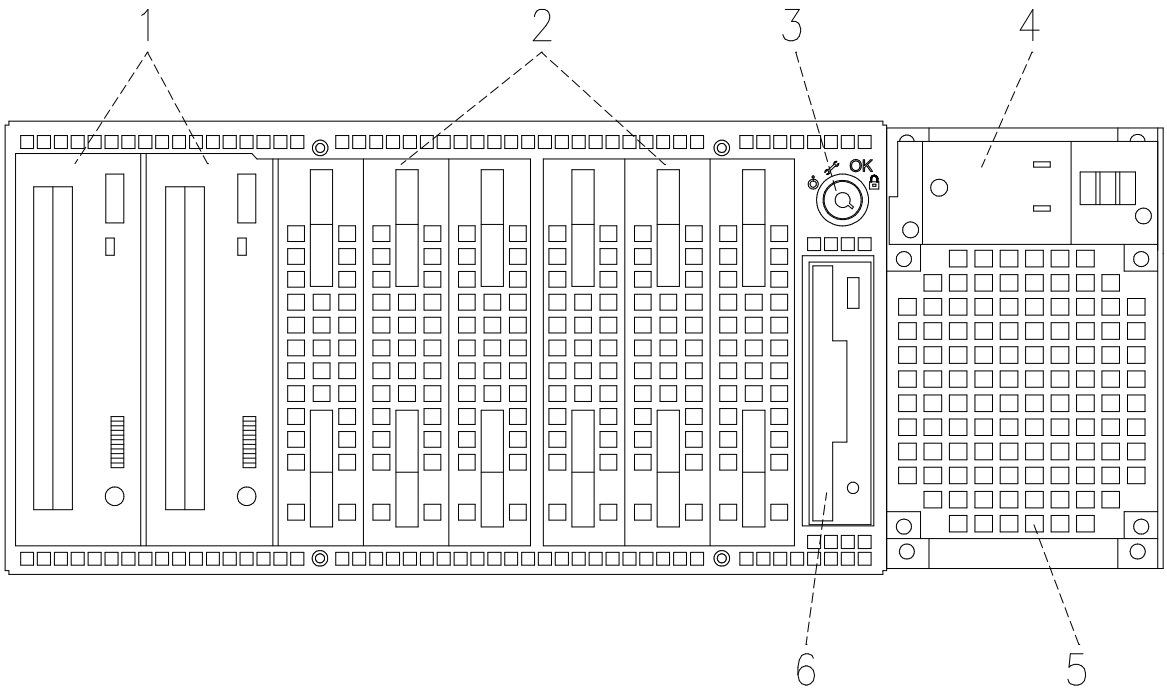
PCI Expansion Drawer

- Up to 1 PCI expansion drawer per CPU drawer.

For a description of the PCI expansion drawer features, please refer to the *PCI Expansion Drawer Quick Set Up* leaflet.

CPU Drawer Front View

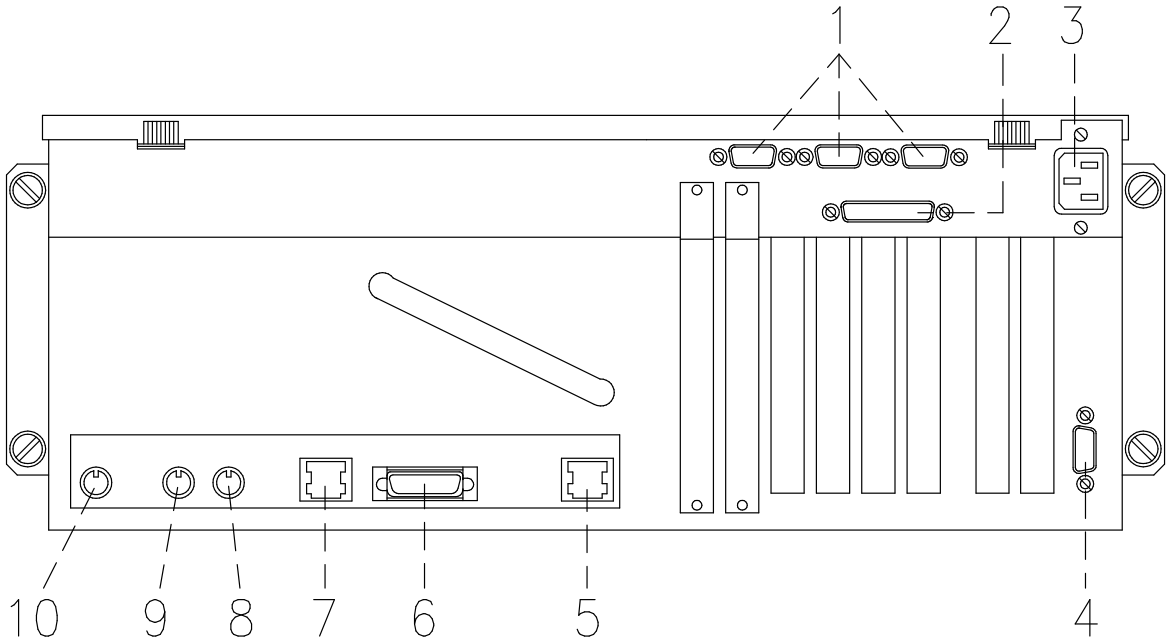
From the front of the CPU drawer, you have access to the following features and components:



1. **Media Devices Area**
2. **Hard Disk Devices Area**
3. **Key Mode Switch**
4. **Operator Panel**
5. **Power Supply Fan**
6. **3.5-inch Diskette Drive**

CPU Drawer Rear View

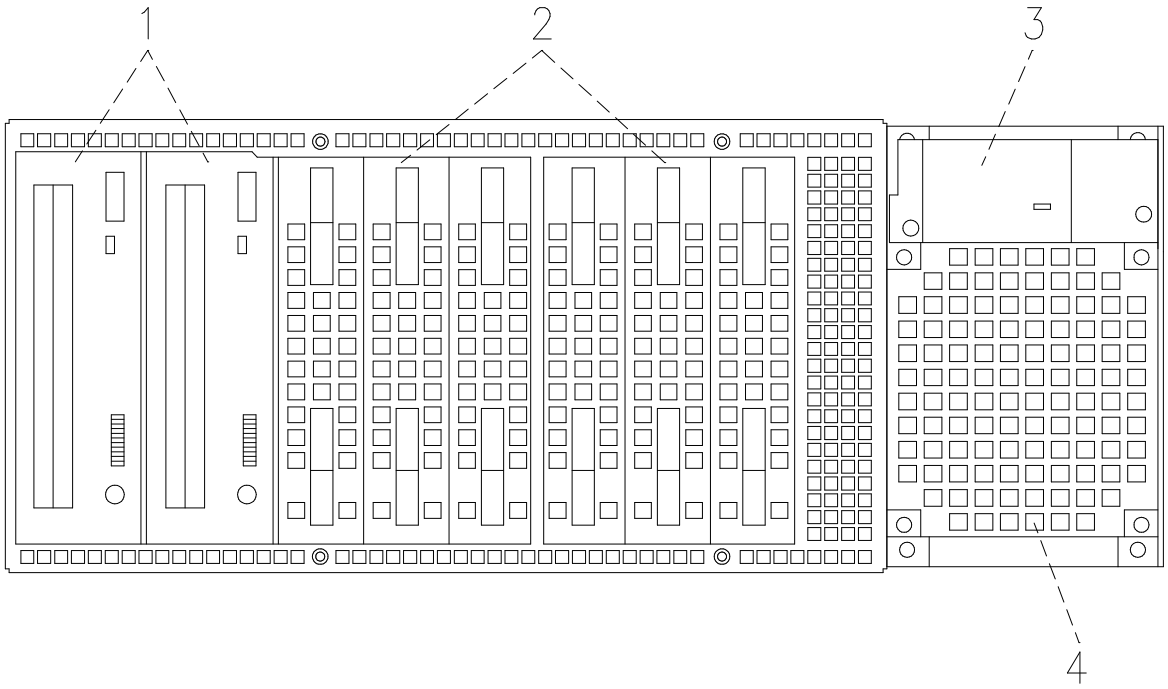
From the rear of the CPU drawer, you have access to the following connectors:



1. **Three serial ports RS-232:** 9-pin male, from right to left: COM1, COM2 and COM3
2. **Parallel port:** 25-pin female
3. **Power cord receptacle**
4. **Video graphics:** SVGA 15-pin female
5. **LAN 100M-bit:** RJ-45
6. **LAN AUI:** 15-pin female
7. **LAN 10M-bit:** RJ-45
8. **Keyboard:** 6-pin mini-DIN female
9. **Mouse:** 6-pin mini-DIN female
10. **RS-485:** for expansion drawer connection

PCI Expansion Drawer Front View

From the front of the PCI expansion drawer, you can access to the following features and components:



1 **Media Devices Area**

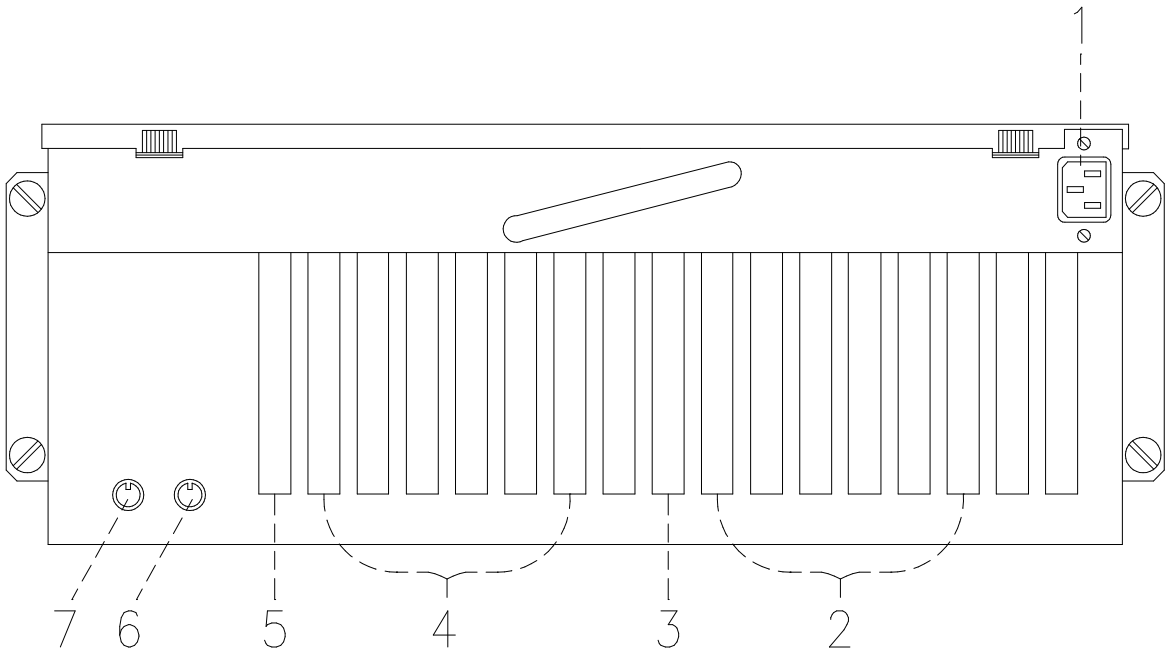
2 **Hard Disk Devices Area**

3 **Operator Panel**

4 **Power Supply Fan**

PCI Expansion Drawer Rear View

From the rear of the PCI expansion drawer, you can identify the following connectors and slots:



1. **Power Cord Receptacle**
2. **PCI Controller Slots, First KPE Planar**
3. **KXB Card Slot, First KPE Planar**
4. **PCI Controller Slots, Second KPE Planar**
5. **KXB Card Slot, Second KPE Planar**
6. **RS-485 Output Connector**
7. **RS-485 Input Connector**

Chapter 2. CPU Drawer Setup Procedure

Perform all the procedures described in this chapter in the indicated order to setup the system and make it operational.

- ❑ **Connecting Devices**
- ❑ **Inserting the Key**
- ❑ **Connecting the Power Cords**
- ❑ **Starting the System for the First Time**

Note: If you need to connect further supported drawers to the CPU drawer, proceed as follows:

1. Set up the CPU drawer, start it for the first time and make sure that no errors are detected during the initial start up, following the procedures described in this chapter.
2. When you are sure that the CPU drawer operates correctly, perform the installation and connection of supported drawers:
   - For the PCI expansion drawer, please refer to the *PCI Expansion Drawer Quick Set Up* leaflet
   - For other drawers, please refer to the documentation delivered with those drawers and to the *Rack Service Guide* manual.

Connecting Devices

The following paragraphs explain how to physically connect devices to the system.

- ❑ **Connecting Terminals**
- ❑ **Connecting Keyboard and Mouse**
- ❑ **Connecting Printers**

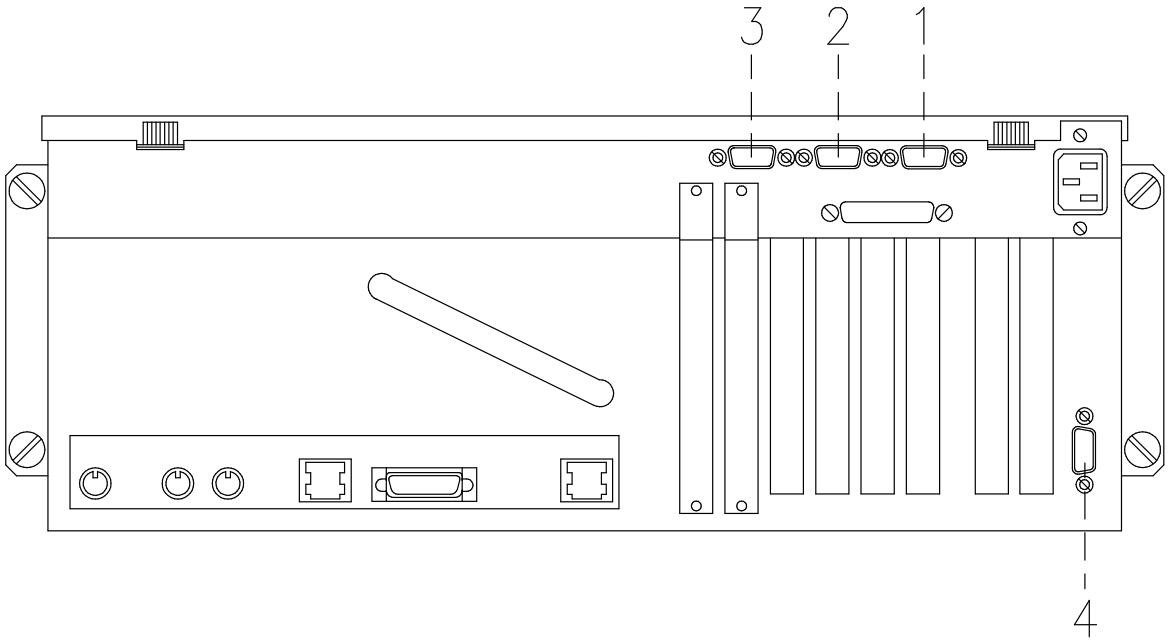
DANGER

When adding or removing any additional devices to or from the system, ensure that the power cables for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.
During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communication lines.

Connecting Terminals

The figure indicates the three serial ports and the SVGA port:

CPU Drawer Rear Side



The following summarizes the function of the terminal ports available on the CPU drawer:

1 **COM1** serial port	Used to connect an ASCII terminal. This terminal is called BUMP console. The Stand-by menu is available only on the terminal connected to this port.
2 **COM2** serial port	Used to remotely connect, via an external modem, an ASCII terminal to be used for remote maintenance by customer service centers. It can also be used as a normal RS-232 serial line.
3 **COM3** serial port	Used as a normal RS-232 serial line. It can also be used to connect an external UPS device (Uninterruptible Power Supply). The UPS, if present, provides continuous power to the system and sustains it in case of outages, for a given amount of time.
4 **SVGA** port	Used to connect a graphic display monitor which is defined, by default, as the Open Firmware console.

Perform the following steps to physically connect any terminals to your system:

1. Connect the terminal to the proper port on the rear of the CPU drawer, as follows:
   a. If you have a graphic monitor, connect it to the SVGA port.

Note: An extender cable for the graphic monitor is supplied with the system. Use it in case the distance between the CPU drawer and the monitor requires it.

   b. If you have an ASCII terminal, connect it to the COM1 serial port (BUMP console) or to any other free serial port.

2. Connect the terminal(s) power cord(s) to the proper power outlet(s).

Once you have connected the required terminal(s), decide which one you want to use as the system console:

- If it is a graphic terminal, no additional operation is required
- If it is an ASCII terminal, you need to:
  - Switch the terminal on
  - Press the appropriate key to activate the terminal setup menu

Note: For information about the key(s) used to activate the terminal setup menu and how to set the required options, refer to the terminal specific documentation.

  - Check that the following options are set as specified below:

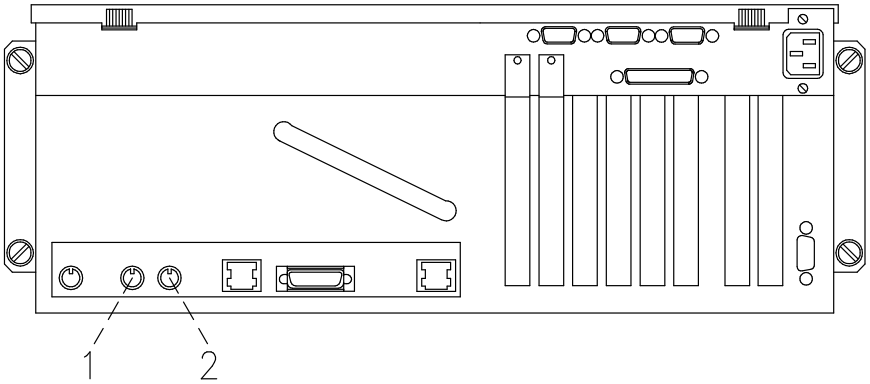
Communication Options	
Line Speed (baud rate)	9600
Word Length (bits per character)	8
Parity	no (none)
Number of Stop Bits	2
Interface	RS-232C (or RS-422A)
Line Control	IPRTS
Keyboard and Display Options	
Screen	normal
Row and Column	24x80
Scroll	jump
Auto LF (line feed)	off
Line Wrap	on
Forcing Insert	line (or both)
Tab	field
Operating Mode	echo
Turnaround Character	CR
Enter	return
Return	new line
New Line	CR
Send	page
Insert Character	space

  - After having successfully completed the console setup, you can switch it off.

Note: Remember that the above settings must be performed for all ASCII terminals connected to the system before you use them. Refer to the specific terminal documentation for detailed information.

Connecting Keyboard and Mouse

CPU Drawer Rear Side



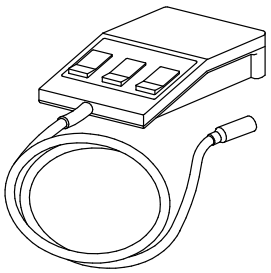
1 **Mouse**

2 **Keyboard**

Note: Keyboard and mouse are for use with graphic monitors only. You do not need to connect them, if you are not going to connect any graphic monitor.

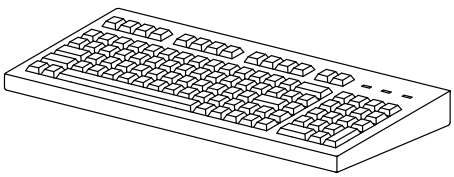
Connect the mouse to the dedicated connector at the rear of the CPU drawer. Do not force the cable plug into the socket.

Note: An extender cable for the mouse is supplied with the system. Use it in case the distance between the CPU drawer and the mouse requires it.



Connect the keyboard to the dedicated connector at the rear of the CPU drawer. Do not force the cable plug into the socket.

Note: An extender cable for the keyboard is supplied with the system. Use it in case the distance between the CPU drawer and the keyboard requires it.

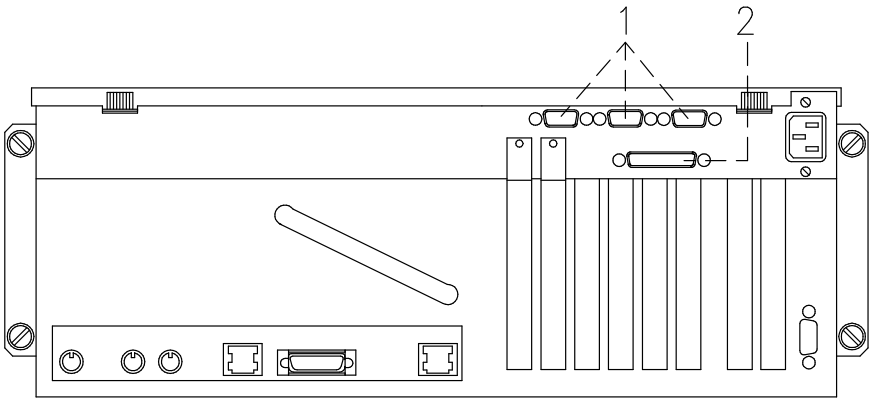


Connecting Printers

If you need to connect a printer to your system:

1. Connect the printer to the proper connector on the rear of the CPU drawer, as follows:
   - If you are going to use it as a parallel printer, connect it to the enhanced parallel connector
   - If you are going to use it as a serial printer, connect it to one of the serial connectors (RS-232 ports).

CPU Drawer Rear Side



1 **Serial Ports**

2 **Parallel Port**

You can also connect printers to a SCSI port (if PCI controllers housing SCSI ports are installed inside the CPU drawer), and to the Ethernet network using either the native connector or external ones.

2. Connect the printer power cord first to the printer itself and then to a power outlet.

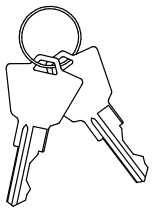
For further information about your printer connection and configuration, please refer to the documentation provided with the printer itself and to the *Terminals and Printers Configuration Guide.*

Inserting the Key

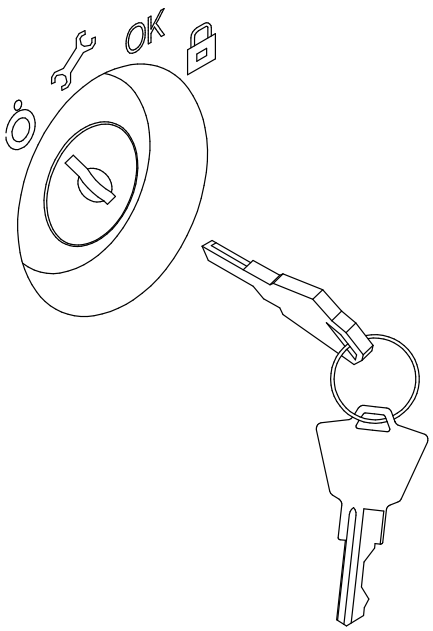
A pair of keys is supplied with the system.

The key is used to activate the key controlled switch which is named Key Mode Switch. This switch enables the power on/off functions.

Keys



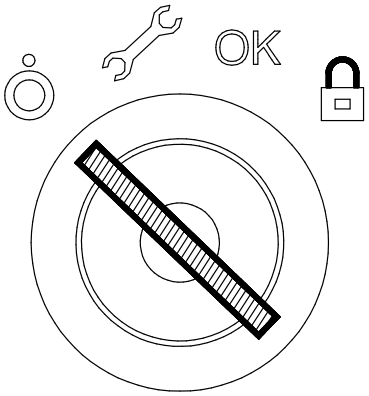
Insert one of the two keys in the CPU drawer Key Mode Switch in the position shown in the figure.



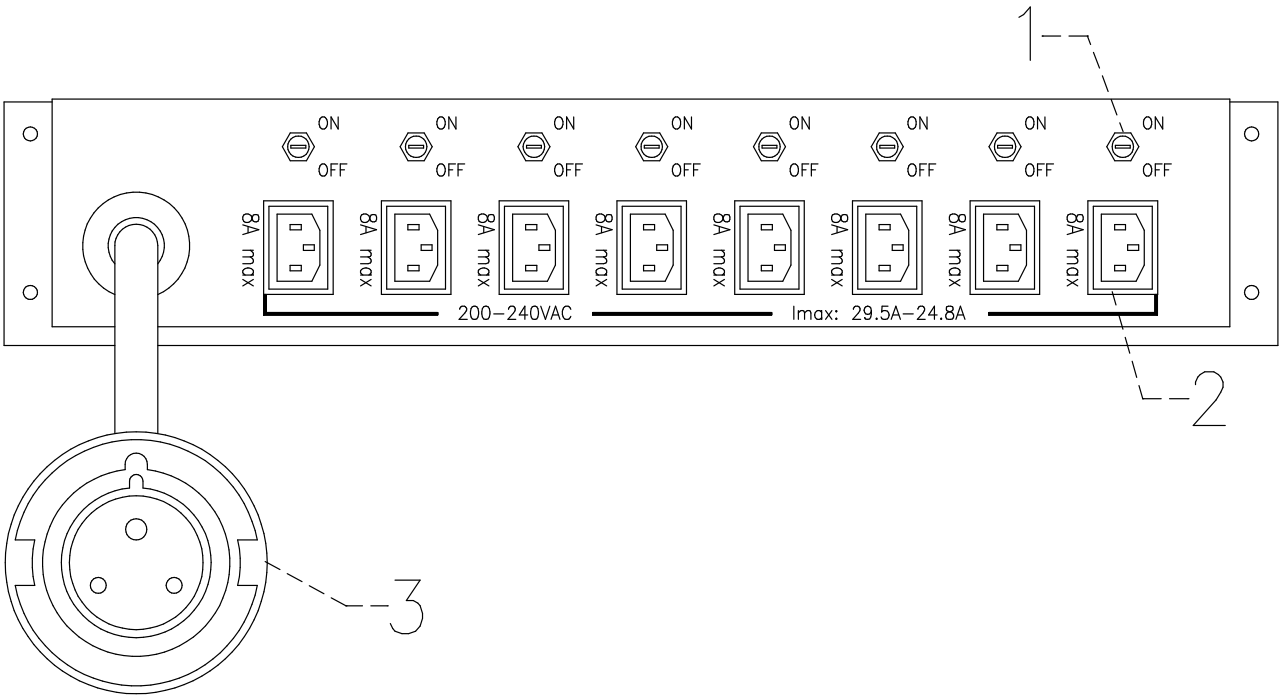
Connecting the Power Cords

Before performing the first startup of the system, the following steps must be performed to give it AC power.

Note: Make sure that the CPU drawer Key Mode Switch is set to the Power Off position and all external devices connected to it are powered off.



1. Identify the Power Distribution Unit (PDU) toward the bottom of the rear of the rack.



1 **Circuit breakers**

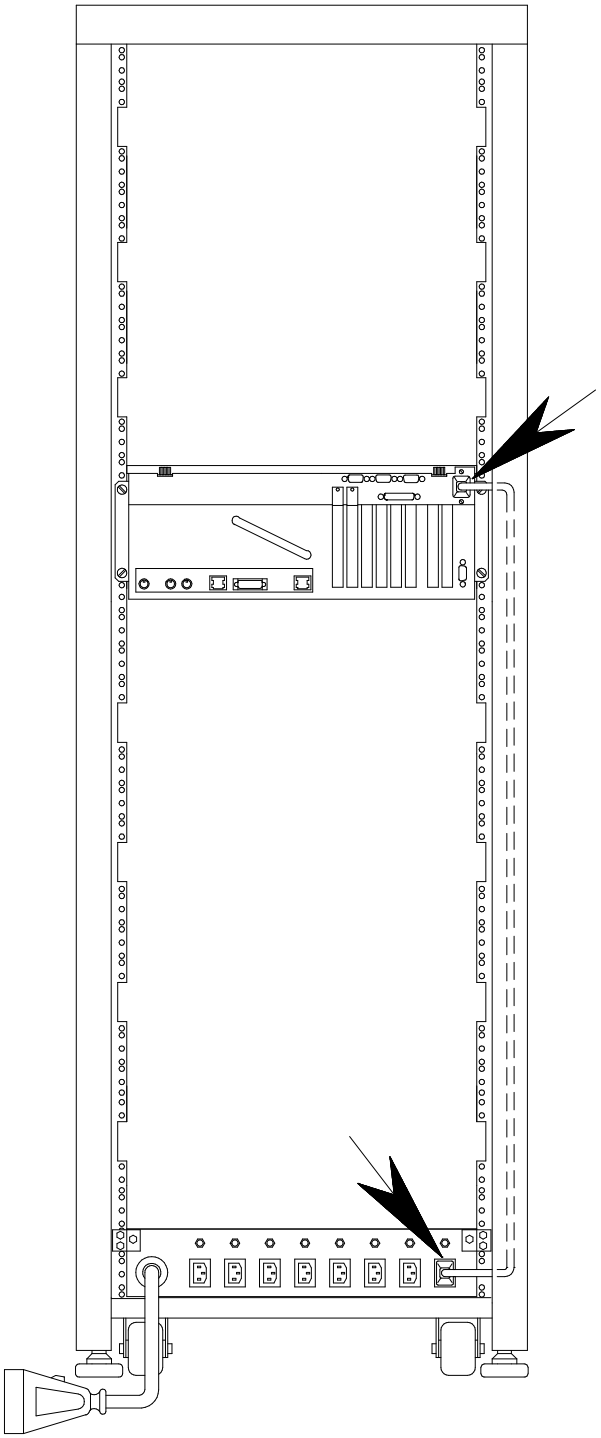
2 **PDU outlets**

3 **PDU male connector**

2. Connect the CPU drawer power cord to a free PDU outlet, performing the following steps:

   a. Choose a free PDU outlet. Make sure the circuit-breaker for that PDU outlet is set to OFF.

   b. Plug the power cord of the drawer into the chosen PDU outlet and into the dedicated receptacle on the drawer itself.

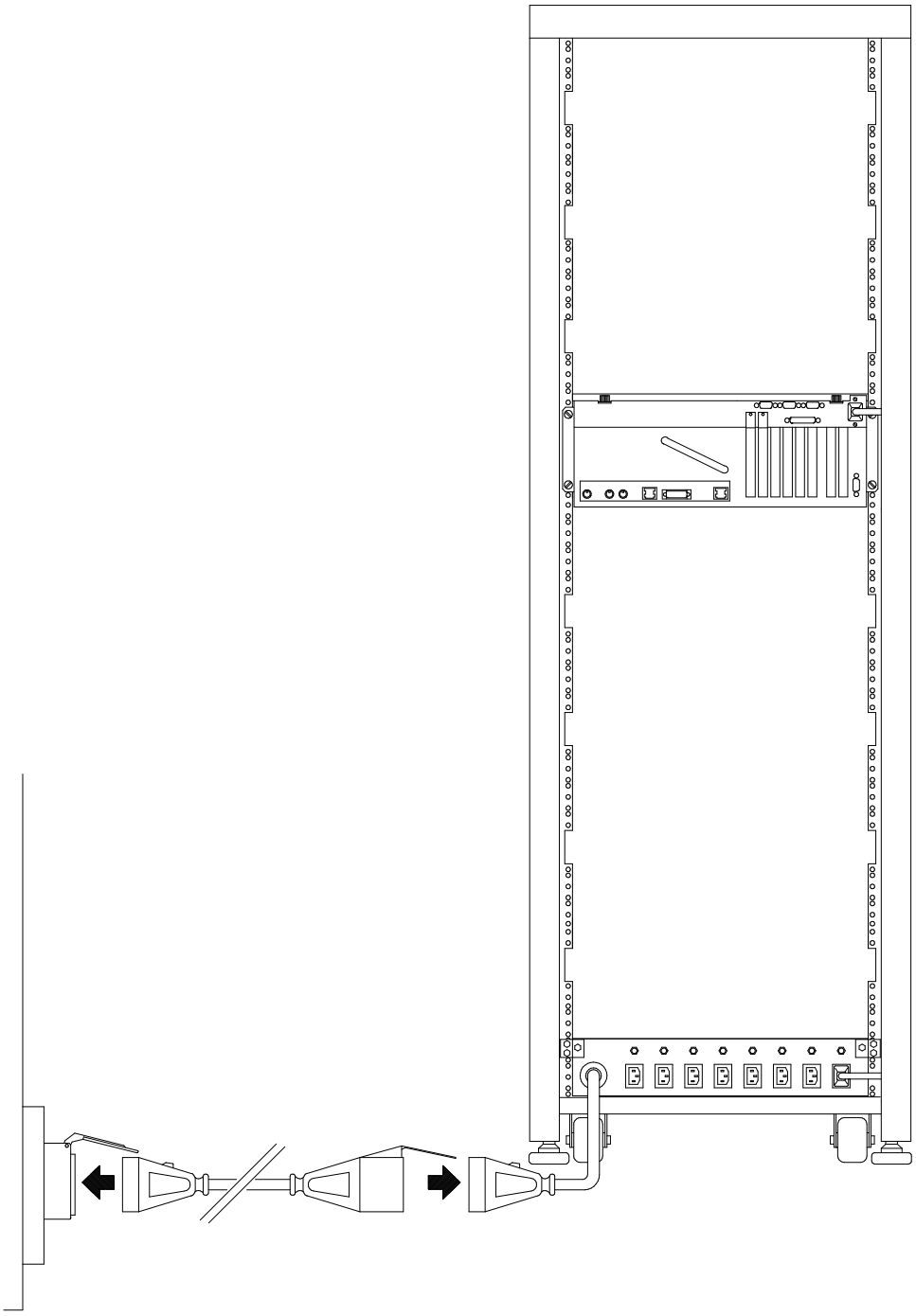


   c. Set the circuit-breaker related to the chosen PDU outlet to ON.

Note: The power cord for each drawer is supplied with the drawer itself.

Warning: Do not connect the CPU drawer and the PCI expansion drawer to a power source other than the PDU.

3. Connect the PDU power cord to the male connector coming from the PDU module.
4. Plug the other end of the PDU power cord to the proper wall outlet.



DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

Starting the System for the First Time

Checking the Software Status

The software for your system can be:

- Pre-installed
- Not-installed.

By default, the system software is pre-installed on your system, when you receive it. This makes your first startup of the system easier and faster.

Make sure your system software is pre-installed, by checking that the *Preload Report* sheet has been supplied with the system. This is a one sheet document which indicates where you can find the preload report file on your system disk.

Note: Once the system is running, you can list the installed software with the command:

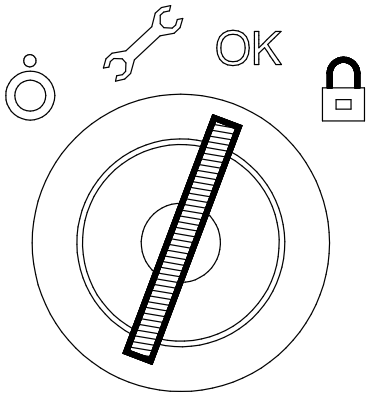
```
lslpp -l | pg
```

In case your system software is not-installed, refer to the *AIX Installation Guide*.

First Startup of a Pre-Installed System

If your system software is pre-installed, you only need to perform some simple customization tasks the first time you power it on. These are tasks like setting time and date, setting root password, create users. A guided program, called *Installation Assistant*, leads you through the required steps. A contextual help is included in the program.

1. Be sure that you have connected all external devices to the CPU drawer and all power cords (including the CPU drawer one) to the proper power outlets, as previously described in this guide.
2. Power on all external devices (e.g., terminals and printers) and drawers.
3. Power on the system setting the Key Mode Switch of the CPU drawer to the Normal position.



4. After some minutes, each terminal connected to the system displays a screen asking you to identify your system console. A specific key is indicated for each terminal. Press the specified key on the terminal you want to use as the system console. Press a key on only one terminal.
5. The startup procedure continues up to the display of the *login* prompt. Type **`root`** and press the Enter key or click on the OK button. If you are using a graphic monitor go to step 6, otherwise skip to step 7.
6. Open a window on your desktop.
7. Type **`install_assist`** and press the Enter key.
8. The *Installation Assistant* screen appears. Execute the tasks that apply to your system in the order they are listed. If you need information on the tasks, use the program help. You can also find further information on the *Installation Assistant* program in the *AIX Installation Guide*.
9. When all the needed tasks are completed, exit to the operating system login prompt, through the *Tasks Completed* selection of the program.

If you need information on the operating system licenses, please refer to the *AIX Installation Guide*.

Your system is ready to work.

Chapter 3. Starting and Stopping the System

This chapter describes the steps for the power on and power off procedures for daily operation of your system.

- **Starting the System**
- **Logging into the System**
- **Stopping the System**
- **Rebooting the System**

Starting the System

CAUTION:
For proper cooling and safe operation of the computer, all the covers must be in place before you power up the system.

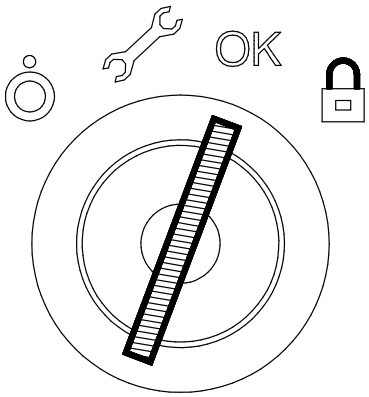
Follow these steps to power up the system for your daily operation.

1. Make sure that the power cord of any external devices, like terminals and printers, are connected to the proper power outlets.
2. Make sure that all the rack drawers are connected to the PDU outlets.

Warning: Do not connect the CPU drawer and the PCI expansion drawer to a power source other than the PDU.

3. Switch on the external devices, if connected.
4. Switch on the system console.
5. Set the CPU drawer Key Mode Switch to the Normal position to power on the entire system.

   The system begins its normal startup routine and is ready for use.



Note: Powering on the system by setting the CPU drawer Key Mode Switch to the Service position, you enter the operating system diagnostic mode.

6. Now go to **Logging into the System**.

Logging into the System

Warning: After you have started the system, it may take a few minutes for your login prompt to appear on the display. This amount of time depends on your system configuration. Do not press any keys while you are waiting, as this may cause unexpected results.

When the login prompt appears on the display:

1. Type your login name and press the Enter key or click on the OK button.
2. If a *password* is required (the related prompt appears), type your password and press the Enter key or click on the OK button (the screen does not display your password as you type it).

   If the password prompt does not appear, you have no password defined and you can begin working on the operating system.

   If the system displays:

   ```
   login incorrect
   ```

   Log in again, and enter the correct login name and password. If you still have problems, ask your system administrator.

Stopping the System

Warning: When using the shutdown procedure for your system, enter the correct command before you stop the system. Failure to do so, may result in loss of data. Please refer to your operating system documentation.

1. Exit any applications that are running. Consult the applications manuals for instructions.
2. Ensure that the media drives do not contain any media.
3. Exit the operating system using the appropriate shutdown command.
   a. It is possible to execute the shutdown procedure from the system console (local or remote line) with the CPU drawer key set to the Secure position. Remember, before rebooting the system, to set the CPU drawer Key Mode Switch to the Normal or the Service position.
   b. When the shutdown program is executed, a warning message is sent to all connected terminals. You can specify the time period between the sending of the warning message and the system shutdown.

      Here is an example:

      `shutdown -h +5r`
      represents a period of 5 minutes.

      Warning: This period should allow all the users sufficient time to finish their sessions and save their data. The amount of time can vary from a few seconds (allowing the user to exit the vi editor, for example) to several minutes (allowing the user to properly finish the update of a database). In the case of a user updating a database, if the system is shutdown before the user has properly finished his update session, there can be loss of important data.
4. Set the CPU drawer Key Mode Switch to the Power Off position.

Note: If nobody needs to use the system, set the Key Mode Switch to the Secure position and remove the key, to prevent unauthorized reset of the system.

5. Switch off the external devices, if connected.

Note: Do not power off any drawers included in high availability configurations.

Rebooting the System

A system reboot recopies the operating system from disk to memory and starts it without turning the system completely off. Reboot is also known as a system reset. It reinitializes the operating system by repeating the Initial Program Load (IPL) operation.

The **reboot** command synchronizes the hard disks and performs some other shutdown activities without halting the system. Use the **reboot** command to reboot the operating system when it is accessed by only one user. The **shutdown** command is used instead of the **reboot** command when the system is running and multiple users are logged on.

Reboot to cause the system to recognize newly installed software, to reset peripheral devices or to recover from a system crash.

To reboot the system you must have root user authority.

At the prompt, enter:

`reboot`

The system reboots.

Chapter 4. What To Do When a Problem Occurs

Identifying the Problem

It may happen, sometimes, that a problem prevents the system from working correctly.

In many cases, this depends on trivial causes, simple human faults, which can be easily discovered and removed, with no need for a specialist intervention.

In other cases, bad functioning is due to more serious human faults or to a system failure, and the problem solution requires technical intervention.

This chapter describes some common problems, the possible trivial causes and the related solutions.

Only when you have ensured that the problem is not due to any of the listed causes, you need technical intervention.

The system itself offers some maintenance tools, available also when the operating system is not running, which test the system hardware, and perform the fault isolation.

If you are maintaining the system on your own, you can find the description of these tools in the *Maintenance Guide*. This guide is available at your supplier.

The following table lists some of the problems that may occur working with the system, during either the system power on or its normal operating state. If you encounter one of these problems, you can try to solve it on your own.

Otherwise, if it is necessary to call the technical support for assistance, remember to read the system serial number, as this will be requested by the technical support.
The system serial number is written on the rating plate label placed on the rear side of the CPU drawer.
Its format is XAN - K*xx* - *Mnnnnn*, where:

K*xx*	is the system run code defined by the manufacturer
M	is a character that identifies the system model
nnnnn	is the system serial number (5 digits).

Note: XAN changes into XBH for the systems shipped to Brazil.

Problem Description	Possible Cause	Solution
System Power		
The system does not power on	The CPU drawer power cord is not connected to a PDU outlet or is not properly connected.	*Properly connect the power cord to the CPU drawer and to a PDU outlet.*
	The PDU power cord is not connected to an AC outlet or is not properly connected.	*Properly connect the power cord to the PDU and to the AC outlet.*
	The AC outlet is faulty.	*Try another AC outlet.*
	The AC source is missing.	*Call your electrician to check the AC source.*
Monitor		
The monitor does not power on (the monitor power light is off)	The monitor power switch is not set to the ON position.	*Set the switch to the ON (I) position.*
	The power cord is not connected to an AC outlet.	*Connect the power cord to a working AC outlet.*
	The power cord is not properly connected.	*Properly connect the power cord to the monitor and to the AC outlet.*
	The AC outlet is faulty.	*Try another AC outlet.*
The monitor power light is on but nothing displays on the screen (see note below)	The monitor contrast and/or brightness knobs are set too low.	*Adjust the contrast and/or brightness knobs until you can see the display.*
	The computer system is not powered on.	*Power on the system.*
	The monitor video cable is not properly connected to the dedicated port.	*Properly connect the video cable to the dedicated port.*
	The video cable is not connected to the proper port.	*Check that video cable is connected to:* *- The SVGA port for a graphic monitor* *- A serial port for any ASCII terminal.*
Mouse		
The mouse does not move the cursor or there is no cursor on the screen	The mouse driver has not been loaded.	*Load the mouse driver.*
	The wrong mouse driver is loaded.	*Remove the conflicting mouse driver and install the correct one.*
	The mouse needs to be cleaned.	*Remove the tracking ball and clean it with a damp cloth. Clean the contacts with a component cleaning spray.*
	You are not using the mouse with the proper monitor.	*Use the mouse with the system graphic monitor.*
The mouse buttons do not work	The contacts are dirty.	*Clean the contacts with a component cleaning spray.*
Note: After you have powered on both the system and the graphic terminal connected to the SVGA port, it may take several seconds before something is displayed on the screen. You have a problem only if nothing displays after at least few minutes.		

Problem Description	Possible Cause	Solution
Keyboard		
The keyboard does not function	The keyboard is not connected to the CPU drawer keyboard port.	*Check the cable connection to the system.*
	The keyboard cable is not properly connected.	*Properly connect the keyboard cable.*
	You are not using the keyboard with the proper monitor.	*Use the keyboard with the system graphic monitor.*
The keyboard types random characters	Liquid or dust spilled into the keyboard.	*Allow the keyboard to dry, or clean it with alcohol or component cleaning spray.*
Some of the keys on the keyboard stick or do not work	Liquid spilled into the keyboard.	*Gently pull the key cap off and remove the sticky substance with alcohol.*
	The key contacts are dirty.	*Clean the key contacts with a component cleaning spray; allow the keyboard to dry thoroughly before powering up the system.*
Printer		
The printer does not power on	The printer power switch is not set to the ON position.	*Set the switch to the ON (I) position.*
	The power cord is not connected to an AC outlet.	*Connect the power cord to a working AC outlet.*
	The power cord is not properly connected.	*Properly connect the power cord to the printer and to the AC outlet.*
	The AC outlet is faulty.	*Try another AC outlet.*
The printer does not print	The printer is off-line.	*Press the printer ON-LINE switch and make certain the ON-LINE LED lights.*
	The printer data cable is not properly connected.	*Check the cable and connect it to the correct port.*
	The printer interface is not properly set.	*Check that the printer is set either to serial mode if you are using a serial connection or to parallel mode if you are using a parallel connection. For more details, please refer to the printer documentation.*

Appendix A. System Specifications

Operating Specifications

The system operates correctly with the following working conditions.

Environment Specifications

Relative Humidity

	System Running	System On Standby
Relative Humidity:	from 20% to 80% without condensation	from 5% to 95% without condensation
Gradient:	10%/h	30%/h
Max. Wet Bulb Temperature:	+24˚C (+75.2˚F)	+28˚C (+82.4˚F)
Moisture Content:	0.019kg water/kg dry air	0.024kg water/kg dry air

Environment Temperature

	System Running	System On Standby
Dry Bulb Temperature:	from +10˚C to +32˚C (from +50˚F to +89.6˚F)	from +5˚C to +55˚C (from +41˚F to +131˚F)
Gradient:	10˚C/h (50˚F/h)	25˚C/h (77˚F/h)

Barometric Pressure

Min: 747 hPa (altitude 2500 m)
Max: 1020 hPa (altitude -150 m)

Electrical Specifications

Power International Standard

IEC 555-2 (IEC 1000-3-2)

Complete Rack Unit Power

5980 VA

CPU Drawer Power

748 VA

PCI Expansion Drawer Power

748 VA

Operating Voltage

Voltage:	200 Vac to 240 Vac		Nominal, Auto ranging	+6%, -10%
Frequency range:	50 to 60 Hz	±3%		
Current:	Max 29.5 A	at 200 Vac		

CPU Drawer Thermal Output (typical)

2550 BTU/hr per CPU drawer

PCI Expansion Drawer Thermal Output (typical)

2550 BTU/hr per PCI Expansion drawer.

Acoustic Noise

The values listed in the table below correspond to a system placed in a room having the temperature of +20˚C (+68˚F), with a configuration including the following components:

Rack

- 1 CPU drawer
- 1 PDU.

CPU Drawer

- 1 CPU card
- 4 memory risers
- 3 PCI/ISA cards
- 3 hard disk drives
- 2 media drives.

	System Running	**System Idle**
Acoustic Power	Lw(A): 63 dB	Lw(A): 61 dB

Standards

The system complies with the following standards:

Hardware

- EMC-CISPR 22 Class A
- VDE871-2 Class A
- FCC CFR47 Class A
- VCCI Class A
- Safety: EN60950 / IEC950 - CSA950 - UL1950.

The system is also compliant with the following European directives:

- 73/23/EEC
- 89/336/EEC and 92/31/EEC
- 93/68/EEC.

Firmware

- IEEE1275-1994 (Open Firmware).

Glossary

A

A: Ampere.

AC: Alternating Current.

AIX: IBM's implementation of UNIX operating system.

ANSI: American National Standards Institute.

Appliance Coupler: A standard IEC 320 male plug placed on the drawer rear side.

ASCII: American Standard Code for Information Interchange.

AUI: Attachment Unit Interface.

B

bank: See memory bank.

BUMP: Bring-Up Microprocessor. A low power microprocessor which monitors the system, especially during the various boot phases before the Operating System is loaded.

C

CD-ROM: Compact Disc Read-Only Memory. High-capacity read-only memory in the form of an optically readable compact disc.

chip: Synonym for integrated circuit (IC).

CPU: Central Processing Unit.

D

DAS: Disk Array Subsystem. A RAID disk drawer, available in different models.

DC: Direct Current generated by the power supply.

DDS: Digital Data Storage.

device areas: See media and disk device areas.

DIMM: Dual In-line Memory Module. It is the smallest component of the system memory.

disk cage: A metallic box which can host two or three disk carriers.

disk carrier: A sled used to install hard disk drives into the system.

DPCI: Dual Port PCI host bridge.

DRAM: Dynamic Random Access Memory.

drawer: Each system or subsystem installed in a rack is a drawer. There are several types of drawers, such as CPU drawers, expansion drawers, DAS drawers.

E

ECMA: European Computer Manufacturers Association.

EEPROM: Electrically Erasable Programmable Read-Only Memory. An EPROM that can be reprogrammed while it is in the system.

EIA: Electronic Industries Association.

EMI: Electromagnetic Interference.

EPROM: Erasable Programmable Read-Only Memory.

ESD: Electrostatic Discharge. An undesirable discharge of static electricity that can damage equipment and degrade electrical circuitry.

F

FAST-10 WIDE-16: A standard SCSI interface, 16 bits, providing synchronous transfer rate of up to 10 MHz, with a data transfer speed of 20M bytes per second.

FAST-20 WIDE-16: An enhanced standard SCSI interface, 16 bits, providing synchronous transfer rate of up to 20 MHz, with a data transfer speed of up to 40M bytes per second. It is also called ULTRA WIDE.

FEPROM: Flash Erasable Programmable Read-Only Memory. An EPROM containing the system firmware.

firmware: The microcode in read-only memory (ROM). It consists of an ordered set of instructions and data stored in a way that is functionally independent of main storage.

Forth: The Open Firmware based language interpreter.

FW: Firmware. See firmware.

G

GUI: Graphical User Interface.

H

high availability: A particular configuration which shares resources between two CPU drawers, so that if one CPU drawer fails, the other one takes the control without interrupting any activity.

hot swapping: The operation of removing a faulty hard disk drive and replacing it with a good one without interrupting the system activity.

I

I2C: Inter Integrated Circuit.

ID: A number which uniquely identifies a device on a bus.

IEC: International Electrotechnical Commission.

I/O: Input/Output.

ISA: Industry Standard Architecture (Bus).

J

JBOD: Just a Bunch Of Disks.

K

KBB: It is a card that provides three RS-232 lines and one parallel line. It is also connected to the KSB card by means of a dedicated flat cable.

KBR: A card dedicated to the connection of a PCI expansion drawer.

KDD: A card installed in the PCI expansion drawer and interconnecting all the expansion drawer resources. It manages also the input and output RS-485 connection between the CPU drawer and the PCI expansion drawer.

KDK Complex: It is composed by the KDK card and two flat cables connected to it. Its main functionality is to define the hard disk drive SCSI-ID.

Key Mode Switch: Key controlled switch which controls system operation mode.

KHS: An optional card to be installed in presence of a RAID configuration. It interfaces the RAID controller card.

KP2: The back plane of a disk cage that connects two hard disk drives with 1.6 inch form factor.

KP3: The back plane of a disk cage that connects three hard disk drives with 1 inch form factor.

KPE: The planar hosting the PCI controllers in the PCI expansion drawer. Up to two KPE planars can be installed in each PCI expansion drawer.

KPL: See System Planar.

KPS: See Power Supply.

KSB: It is a card housing the BUMP logic. Also, it holds two dedicated connectors which interconnect the KSB card to the KBB card and to the KHS card, if this is installed.

KXB: A card installed in the PCI expansion drawer, dedicated to the connection to the CPU drawer.

L

LAN: Local Area Network.

LED: Light-Emitting Diode.

M

media and disk device areas: Areas which house the media drives and the hard disk drives.

memory bank: The minimum quantity of memory used by the system. It physically consists of four memory DIMM's. See also DIMM and riser.

MFG: Manufacturing.

MP: MultiProcessor.

multimedia: Information presented through more than one type of media. On computer systems, this media includes sound, graphics, animation and text.

multitasking: The ability to perform several tasks simultaneously. Multitasking allows you to run multiple applications at the same time and exchange information among them.

N

NVRAM: Non Volatile Random Access Memory.

O

OF: See Open Firmware.

OP: See Operator Panel.

Open Firmware: An architecture for the firmware that controls a computer before the Operating System execution. It also provides a user-interface.

Operator Panel: The system panel where the 3-Digit Hexadecimal Display, two LEDs and the Reset button are located.

Operating System: The software which manages the computer's resources and provides the operating environment for application programs.

P

PCI: Peripheral Component Interconnect. A bus architecture that supports high-performance peripherals such as graphic boards, multimedia video cards and high-speed network adapters.

PDU: Power Distribution Unit. The rack power distribution system for the installed drawers.

PowerPC: A standard RISC microprocessor family.

Power Supply: The CPU drawer and the PCI expansion drawer are equipped with one power supply module. See Redundant Power Supply.

PPI: Parallel Port Interface.

Q

No entries.

R

rack: The metallic frame which houses the drawers and provides them power through its Power Distribution Unit (PDU).

RAID: Redundant Array of Inexpensive Disks. A method of combining hard disk drives into one logical storage unit which offers disk-fault tolerance.

RAM: Random Access Memory.

Redundant Power Supply: The power supply composed by two modules in redundant configuration. They are the same and work in parallel. In case of a power supply fault, the second module takes over automatically providing the needed power.

riser (SRC): A card which can host up to six memory DIMM's. It is used to expand the system memory capacity.

RMS: Recovery Management Support.

ROM: Read Only Memory.

RS-232: An EIA interface standard that defines the physical, electronic and functional characteristics of an interface line.

RS-422: An EIA interface standard that defines the physical, electronic and functional characteristics of an interface line.

RS-485: A line for drawer interconnection. It is used for the connection of expansion drawers.

RSF: Remote Services Facilities.

S

SCSI: Small Computer System Interface. An input and output bus that provides a standard interface used to connect peripherals such as disks or tape drives in a daisy chain.

SID: System Identifier.

slot cover: A metallic plate that covers free PCI/ISA controller card slots.

SRC: Six-DIMM Riser Card.

Stand-By menu: A menu which is available on the terminal connected to the COM1 port when the system is in standby state. It is used for system maintenance and testing activities.

SYSID: System Identification.

system console: A console, usually equipped with a keyboard and display screen, that is used by an operator to control and communicate with a system.

system planar (KPL): The planar which interconnects all the system resources.

SVGA: Super Video Graphics Array.

T

torx: A special screw with a six-point starlike hollow.

U

U: Unit. Racks and drawers are measured in Units. Each U corresponds to 44.45 mm (1.75 inches).

ULTRA SCSI: See Fast-20 WIDE-16.

UPS: Uninterruptible Power Supply. A device which provides continuous power and sustains the system it is connected to, in case of outages.

V

V: Volt.

VCC: Voltage Continuous Current.

VCCI: Voluntary Control Council for Interference.

VGA: Video Graphics Array.

W

No entries.

X

No entries.

Y

No entries.

Z

No entries.

Index

S

T

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[_ _] : **no revision number means latest revision** / pas de numéro de révision signifie révision la plus récente					

NOM / NAME : ______________________________ Date : ____________

SOCIETE / COMPANY : ______________________________

ADRESSE / ADDRESS : ______________________________

____

PHONE / TELEPHONE : ____________________ FAX : ____________________

E–MAIL : ______________________________

For Bull Subsidiaries / Pour les Filiales Bull :

Identification: ______________________________

For Bull Affiliated Customers / Pour les Clients Affiliés Bull :

Customer Code / Code Client : ______________________________

For Bull Internal Customers / Pour les Clients Internes Bull :

Budgetary Section / Section Budgétaire : ______________________________

For Others / Pour les Autres :

Please ask your Bull representative. / Merci de demander à votre contact Bull.

PLACE BAR CODE IN LOWER LEFT CORNER

BULL ELECTRONICS Angers
CEDOC
34 Rue du Nid de Pie – BP 428
49004 ANGERS CEDEX 01
FRANCE

ORDER REFERENCE
86 A1 18PX 02

Bull

Utiliser les marques de découpe pour obtenir les étiquettes.
Use the cut marks to get the labels.

Bull ESCALA EPC400

Setting Up the System

86 A1 18PX 02

Bull ESCALA EPC400

Setting Up the System

86 A1 18PX 02

Bull ESCALA EPC400

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