

48X IDE CD-ROM Drive

# Installation and Using Guide

**Note**

Before you install this product and use this information, be sure to read the product warranties and notices information included with the system unit into which you are installing the product.

**Second Edition (December 2002)**

Before using this information and the product it supports, read the information in "Safety Information" on page v and Appendix B, "Notices" on page 17.

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# Contents

<b>Safety Information</b> . . . . .	v
Laser Safety Information . . . . .	v
Laser Compliance . . . . .	v
<b>Handling Static-Sensitive Devices</b> . . . . .	vii
<b>About This Book</b> . . . . .	ix
ISO 9000 . . . . .	ix
References to AIX Operating System . . . . .	ix
Related Publications . . . . .	ix
Trademarks . . . . .	ix
<b>Chapter 1. Overview</b> . . . . .	1
Front View of the 48X IDE CD-ROM Drive . . . . .	2
Rear View of the 48X IDE CD-ROM Drive . . . . .	2
Understanding the Status Lights . . . . .	3
Other Handling Considerations . . . . .	3
Handling Compact Discs . . . . .	3
Loading a Compact Disc Horizontally . . . . .	4
Loading a Compact Disc Vertically . . . . .	5
Opening the Tray Manually . . . . .	5
Playing an Audio CD . . . . .	5
<b>Chapter 2. Preparing to Install the 48X IDE CD-ROM Drive</b> . . . . .	7
Verifying Your Hardware Requirements . . . . .	7
Verifying Your Software Requirements . . . . .	7
Checking Your Package . . . . .	7
Gathering Tools and Documentation . . . . .	7
Jumper Setting and Configuration . . . . .	8
Jumper Pin Positions . . . . .	8
<b>Chapter 3. Installing the 48X IDE CD-ROM Drive</b> . . . . .	9
Handling Recommendations . . . . .	9
Installing and Connecting the 48X IDE CD-ROM Drive . . . . .	9
Configuring the 48X IDE CD-ROM Drive . . . . .	10
Verifying the Installation . . . . .	10
<b>Chapter 4. Installing Device Driver Software</b> . . . . .	11
Installing Device Drivers on an AIX System . . . . .	11
<b>Appendix A. Communications Statements</b> . . . . .	13
Federal Communications Commission (FCC) Statement . . . . .	13
European Union (EU) Statement . . . . .	14
International Electrotechnical Commission (IEC) Statement . . . . .	14
United Kingdom Telecommunications Safety Requirements . . . . .	14
Avis de conformité aux normes du ministère des Communications du Canada . . . . .	15
Canadian Department of Communications Compliance Statement . . . . .	15

VCCI Statement . . . . . 15  
Radio Protection for Germany . . . . . 15  
**Appendix B. Notices** . . . . . 17

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## Safety Information

### 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.

Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.

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 communications lines.

D05

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## Laser Safety Information

### CAUTION:

This product may contain a CD-ROM, DVD-ROM, or laser module on a PCI card, which are class 1 laser products.

C30

## Laser Compliance

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with the IEC 825 (first edition 1984) as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

### CAUTION:

All laser modules are designed so that there is never any human access to laser radiation above a class 1 level during normal operation, user maintenance, or prescribed service conditions. Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Only trained service personnel should perform the inspection or repair of optical fiber cable assemblies and receptacles.

C25, C26



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## Handling Static-Sensitive Devices

**Attention:** Static electricity can damage the device and your system unit. To avoid damage, keep this device in its anti-static protective bag until you are ready to install it. To reduce the possibility of electrostatic discharge, follow the precautions listed below:

- 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 printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the CD-ROM drive is still in its anti-static package, touch it to an unpainted metal part of the system unit for at least two seconds. (This drains static electricity from the package and from your body.)
- Remove the device from its package and install it directly into your system unit without setting it down. If it is necessary to set the device down, place it on its static-protective package. (If your device is an adapter, place it component-side up.) Do not place the device on your system unit cover or on a metal table.
- Take additional care when handling devices during cold weather, as heating reduces indoor humidity and increases static electricity.





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## About This Book

This book provides information about the 48X Integrated Drive Electronics (IDE) CD-ROM Drive, and how to properly set the jumpers, install the CD-ROM drive, and use the CD-ROM drive. Use this book along with your specific system unit and operating system documentation.

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## ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

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## References to AIX Operating System

This document may contain references to the AIX operating system. If you are using another operating system, consult the appropriate documentation for that operating system.

This document may describe hardware features and functions. While the hardware supports them, the realization of these features and functions depends upon support from the operating system. AIX provides this support. If you are using another operating system, consult the appropriate documentation for that operating system regarding support for those features and functions.

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## Related Publications

The following publications contain related information:

- System unit documentation for information specific to your hardware configuration
- AIX operating system documentation for information specific to your software configuration

The AIX documentation library is available at the following Web address:

<http://www-1.ibm.com/servers/aix/library/>. Select **Technical Publications**. AIX documentation is also contained on the AIX Documentation CD which was shipped with your AIX operating system. The documentation is made accessible by loading the documentation CD onto the hard disk or by mounting the CD into a CD-ROM compatible drive.

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## Trademarks

The following term is a trademark of International Business Machines Corporation in the United States, other countries, or both:

- AIX

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



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## Chapter 1. Overview

**Note:** This document may contain references to the AIX operating system. If you are using another operating system, consult the appropriate documentation for that operating system.

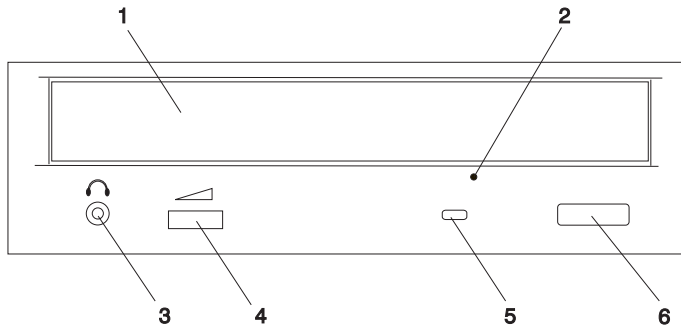
This document may describe hardware features and functions. While the hardware supports them, the realization of these features and functions depends upon support from the operating system. AIX provides this support. If you are using another operating system, consult the appropriate documentation for that operating system regarding support for those features and functions.

This chapter describes the features of the 48X Integrated Drive Electronics (IDE) CD-ROM Drive and provides instructions for handling the drive and CD-ROM discs. The CD-ROM drive is a half-high, 5.25", single-ended, tray-loading drive. Its distinctive features include the following:

- High-speed data transfer rate of 3300 KB per second (22X) at inner diameter
- 7200 KB per second (48X) at outer diameter
- High-speed burst rate of 16.6 MB per second in PIO mode 4 and 33.3 MB per second in UDMA mode 2
- Average random access time of 75 ms
- Can be installed in either a vertical or horizontal orientation
- Loading tray accommodates both 8 cm discs (in the horizontal orientation only) and 12 cm discs
- Reads multi-session discs
- Reads CD-recordable discs
- Reads CD-RW discs
- Supports all major CD-ROM formats: Mode 1, Mode 2, XA, CDDA, and audio

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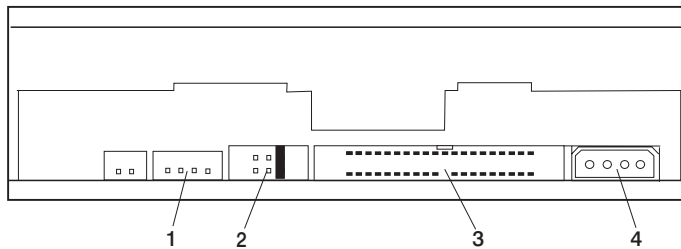
## Front View of the 48X IDE CD-ROM Drive



- 1 Compact Disc Tray
- 2 Emergency Eject Hole
- 3 Headphone Jack
- 4 Volume Control
- 5 Status Light
- 6 Load/Unload Button

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## Rear View of the 48X IDE CD-ROM Drive



**Note:** Audio is currently not enabled on server systems.

- 1 Audio Line-Out Connector
- 2 Jumper Block and Pins
- 3 40-pin IDE Interface Connector
- 4 Power Connector

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## Understanding the Status Lights

The status lights indicate information about the operational status of the drive, as described in the following table:

Status Light Condition	Meaning
Off	When the Drive is in standby mode with or without a disc loaded.
On	When the Drive tray is inserted.
On	When the Spindle Motor begins the spin operation.
On	When the Drive is reading data.
On	When the Drive is in Play Audio Mode.
Off	When a Hardware error condition exists. <b>Note:</b> If this occurs, contact your service representative.

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## Other Handling Considerations

Be sure to take the following additional precautions when you use the CD-ROM drive:

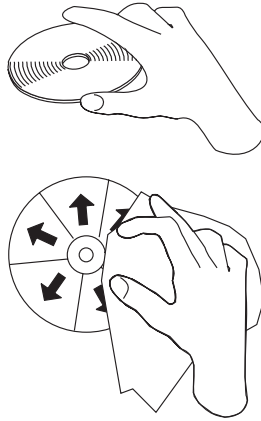
- Remove compact discs from the tray before you move the drive anywhere.
- Do not place the drive where any of the following conditions exist:
  - High temperature
  - High humidity
  - Excessive dust
  - Excessive vibration or sudden shock
  - Inclined surface
  - Direct sunlight
- Do not insert foreign objects into the drive.
- Do not stack objects on the drive.
- Do not remove the drive covers or attempt to service the drive yourself.

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## Handling Compact Discs

Compact discs are high-density media that must be handled with care and kept clean to ensure that they remain readable. Use the following precautions to ensure reliability:

- Hold the compact disc by the edges.
- Do not touch the surface of the compact disc.
- To remove dust or fingerprints, wipe the compact disc from the center to the outside of the compact disc, as shown.



**Attention:** Wiping the compact disc in a circular direction can cause loss of data.

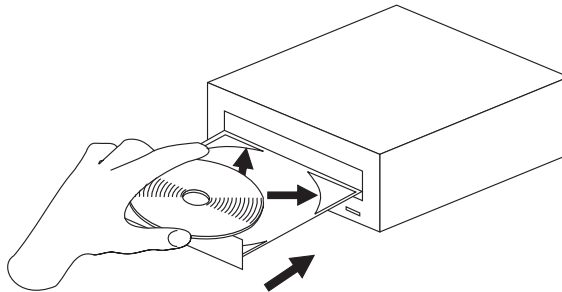
- Do not write on the surface.
- Do not store or place the compact disc in direct sunlight.
- Do not use benzene, thinners, or other cleaners to clean the compact disc.
- Do not bend the compact disc.

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## Loading a Compact Disc Horizontally

To load a compact disc into a horizontally mounted drive, do the following:

1. Press the Load/Unload button to open the tray. The tray slides out of the drive.
2. Place the compact disc in the tray with the label facing up.
3. Press the Load/Unload button, or gently push in the tray, to close the tray.

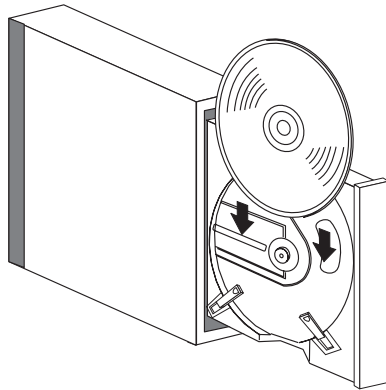


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## Loading a Compact Disc Vertically

To load a compact disc into a vertically mounted drive, do the following:

1. Press the Load/Unload Button to open the tray. The tray slides out of the drive.
2. Insert the compact disc behind the tabs, label side out.
3. Press the Load/Unload button, or gently push in the tray, to close the tray.



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## Opening the Tray Manually

The tray should automatically open when you press the Load/Unload button. If it does not automatically open, follow these steps to open it manually:

1. Follow your operating system instructions for shutting down your system, then turn off the power to your system unit. Unplug the power cord from the wall outlet.
2. Insert the straightened end of a paper clip into the emergency eject hole until you feel some resistance. See “Front View of the 48X IDE CD-ROM Drive” on page 2 if you are not sure where the emergency eject hole is located.
3. Continue to push in the paper clip while you pull out the tray with your fingernail.
4. Pull the tray completely open and remove the disc. It is normal for the tray to make a clicking sound while you are pulling it open.

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## Playing an Audio CD

**Note:** Audio is not supported on servers at this time.

To play an audio CD, you must either have headphones connected to the headphone jack located on the front of the drive or an audio card connected to the line-out connector located on the back of the drive. You must also have an audio software application installed.

The headphone jack provides the connection for headphones using a 3.5 mm (1/8”) stereo mini-plug. The volume control adjusts the audio output level for the headphones.





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## Chapter 2. Preparing to Install the 48X IDE CD-ROM Drive

This chapter describes how to prepare to install your 48X IDE CD-ROM Drive. Preparing to install the CD-ROM drive involves the following tasks:

- Verifying your hardware requirements
- Verifying your software requirements
- Making sure your package is complete
- Gathering tools and documentation
- Verifying that the jumper settings are correct

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### Verifying Your Hardware Requirements

The 48X IDE CD-ROM Drive requires the following hardware:

- An available bay large enough to hold a 5-1/4 inch half-high device
- A 40 pin IDE interface cable installed to connect to the drive in the available bay

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### Verifying Your Software Requirements

The 48X IDE CD-ROM Drive is supported on AIX 4.3.3 Release Date 9/2001 and later, or AIX 5.1.0 Release Date 9/2001 and later. Ensure that your operating system supports this CD-ROM drive before you install the drive. Contact your service representative for assistance.

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### Checking Your Package

Check that your package contains the following items:

- 48X IDE CD-ROM Drive
- Mounting screws
- CD-ROM test disc
- Registration card
- 1 jumper (included on the jumper block on the rear of the drive)

If an item is missing or damaged, contact the place of purchase.

**Note:** Be sure to retain your proof of purchase, as it might be required to receive warranty service.

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### Gathering Tools and Documentation

To install the drive, you need the following items:

- Flat-blade screwdriver
- Your system unit installation documentation
- Your operating system documentation

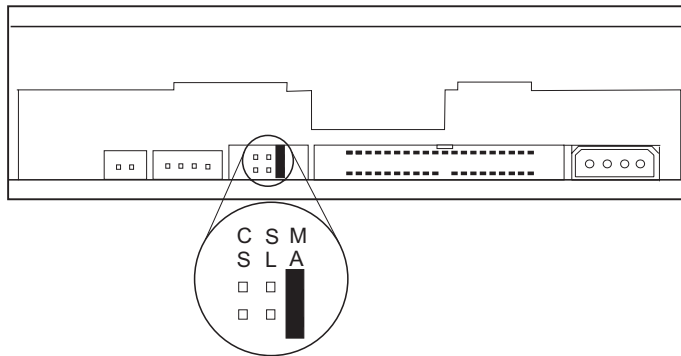
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## Jumper Setting and Configuration

When two drives are connected to the same cable, one drive is designated as the master and the other drive is the slave. The function of each drive is determined by the master setting on the drive. Only one master and one slave are permitted. When a single CD-ROM drive is shipped with the system, the drive is the master by default. When a second drive is attached, that device is configured as a slave.

### Jumper Pin Positions

The following figure shows the jumper pins on the rear of the 48X IDE CD-ROM Drive. A single jumper is used to select whether a drive is used as a master or slave. The jumper setting is shown in the master position as it is set at the factory. If you are installing the drive as a slave, move the jumper to the slave position.



#### Master Jumper Designation (MA)

If the jumper is set in this position, the drive is configured as a master. Use this jumper position when the 48X IDE CD-ROM Drive is the first drive added to a single cable.

#### Slave Jumper Designation (SL)

If the jumper is set in this position, the drive is configured as a slave. Use this jumper position when a second 48X IDE CD-ROM Drive is added to a single cable.

#### Cable Select Setting (CS)

This setting is not used at this time. If the jumper is set in this position, the drive uses the host interface signal for configuration.

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## Chapter 3. Installing the 48X IDE CD-ROM Drive

This chapter takes you through the steps of installing your 48X IDE CD-ROM Drive, which involves the following tasks:

- Installing the drive in your system unit
- Connecting the CD-ROM drive
- Configuring the device driver software
- Verifying a successful installation

**Note:** Refer to your system unit documentation for safety information before you install and connect your 48X IDE CD-ROM Drive.

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### Handling Recommendations

**Attention:** Be sure to read “Handling Static-Sensitive Devices” on page vii before you remove the 48X IDE CD-ROM Drive from its anti-static bag or any time you handle it.

For optimum performance, always follow the recommendations listed below:

- Handle the drive carefully and by its external metal chassis. Keep your hands away from the printed circuit boards, components, and printed circuit (flex) cables.
- If possible, work on a cushioned surface, and do not drop the CD-ROM drive onto the work surface.
- If you move the CD-ROM drive to an environment that is colder or warmer than its previous environment, keep the drive in its package and allow the package to reach the current room temperature. This prevents potential data loss or damage to the CD-ROM drive. Allow one hour of acclimation for each 10 degrees C (18 degrees F) difference between the ship or storage temperature and the room temperature.

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### Installing and Connecting the 48X IDE CD-ROM Drive

After you set the correct jumper settings, you can install the drive into your system unit. The 48X IDE CD-ROM Drive must be installed into an available system unit bay and connected to a 40-pin IDE cable and power cable. Refer to “Jumper Setting and Configuration” on page 8 as you go through the following steps to install and connect the drive:

To install and connect the 48X IDE CD-ROM Drive, do the following:

1. Follow your operating system instructions for shutting down your system, then turn off the power to your system unit.
2. On an AIX system, log on with **Root Authority**, type: `shutdown -F` at the system prompt, then press Enter. When `halt completed` displays, turn off the system unit power and unplug the power cord from the wall outlet.
3. Remove the covers of your system unit. Follow the instructions provided in your system unit documentation.

4. Install the drive in an available bay in your system unit. See the instructions in your system unit documentation for installing an internal device.

**Note:** Be sure to use the screws provided with this drive. Using the wrong size screws might cause damage to the drive.

5. Orient the connector properly, then plug the 40-pin IDE interface cable into the IDE connector located on the back of the drive.
6. Plug the power cable into the power connector located on the back of the drive.
7. Follow the directions provided in your system unit documentation to reinstall the covers of your system unit.
8. Plug the power cord back into the wall outlet.
9. Turn on the power to your system unit so that the operating system can update the system configuration. Save this book and store any extra parts in a safe place in case you ever change your configuration.

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## Configuring the 48X IDE CD-ROM Drive

To configure the CD-ROM drive after installation, boot your system unit. Device drivers are provided in the AIX operating system and other operating systems that support the 48X IDE CD-ROM Drive. Your operating system recognizes the drive and automatically updates your system unit configuration.

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## Verifying the Installation

To verify the successful installation of the 48X IDE CD-ROM Drive on an AIX system, do the following:

1. At the system command prompt, type:  

```
lsdev -Cc cdrom
```
2. Press Enter.

A list of installed IDE devices displays. An *Available* status indicates that the drive is installed and ready to use. If your system does not show the 48X IDE CD-ROM Drive as *Available*, return to the beginning of this book and review the installation procedure to verify that the drive is installed correctly. Ensure that the cable connections and jumper settings are correct. If you cannot determine the problem, call your service representative for assistance.

If you are installing this drive on an operating system other than AIX, see the documentation for the operating system to verify the installation of the drive.

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## Chapter 4. Installing Device Driver Software

Device driver software is provided in AIX and other operating systems that support this CD-ROM drive. However, if you should have to install device drivers, follow the installation procedures provided in your operating system documentation. This chapter provides instructions for installing device drivers on an AIX system.

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### Installing Device Drivers on an AIX System

To install device drivers, do the following:

1. At the system prompt, log in as a root user.
2. Insert the device driver media into the appropriate media device.
3. To start SMIT, type `smit devinst` at the prompt, then press Enter. The Install Additional Device Software panel displays. The INPUT device/directory for software option is highlighted for selection.
4. Press F4 to display a list of input devices from which you can select. The cursor is already positioned on the input device entry field.
5. Either type the name of the input device in the entry field or select the appropriate device, then press Enter. The Install Additional Device Software panel displays the device you selected in the INPUT device/directory for software field. The SOFTWARE to install option is highlighted.
6. Press F4 to display a list of the device packages you can install.
7. To display a Find dialog box, type `/` in the field where the cursor is positioned.
8. Select the following device package names; `devices.ide.cdrom`, `devices.pci.ad100501` and then press Enter.
9. Press F7 to select the device package name, then press Enter. The Install Additional Device Software panel displays the completed required fields.
10. Press Enter. The ARE YOU SURE list displays.
11. Press Enter. The COMMAND STATUS panel displays. The term RUNNING is highlighted, indicating that the software is being installed and configured.
12. When RUNNING changes to OK, scroll to the bottom of the panel and locate the Installation Summary. If the installation was successful, SUCCESS displays at the bottom of the panel in the Result column of the Installation Summary.
13. Remove the device driver software media from the media device.
14. Press F10 to exit SMIT.
15. To shut down and restart your system, type `shutdown -Fr` and then press Enter. If you want to verify the installation, follow the steps provided in “Verifying the Installation” on page 10.

**Note:** To eliminate a restart, you can log in as root user and use file command `cfgmgr`.



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## Appendix A. Communications Statements

The following statement applies to this product. The statement for other products intended for use with this product appears in their accompanying documentation.

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### Federal Communications Commission (FCC) Statement

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from authorized dealers. Neither the provider nor 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.

Responsible Party:

- International Business Machines Corporation
- New Orchard Road
- Armonk, New York 10504
- Telephone: (919) 543-2193



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## European Union (EU) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. The manufacturer cannot 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 supplied by third parties. Consult with your dealer or sales representative for details on your specific hardware.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

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## International Electrotechnical Commission (IEC) Statement

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

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## United Kingdom Telecommunications Safety Requirements

This equipment is manufactured to the International Safety Standard EN60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

The network adapter interfaces housed within this equipment are approved separately, each one having its own independent approval number. These interface adapters, supplied by the manufacturer, do not use or contain excessive voltages. An excessive voltage is one which exceeds 70.7 V peak ac or 120 V dc. They interface with this equipment using Safe Extra Low Voltages only. In order to maintain the separate (independent) approval of the manufacturer's adapters, it is essential that other optional cards, not supplied by the manufacturer, do not use main voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by the manufacturer.



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## Avis de conformité aux normes du ministère des Communications du Canada

Cet appareil numérique de la classe B est conform à la norme NMB-003 du Canada.

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## Canadian Department of Communications Compliance Statement

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

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## 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B情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。  
取扱説明書に従って正しい取り扱いをして下さい。

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

This product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

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## Radio Protection for Germany

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.



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## Appendix B. Notices

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

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

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

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Information concerning products made by other than the manufacturer was obtained from the suppliers of those products, their published announcements, or other publicly available sources. The manufacturer has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to products made by other than the manufacturer. Questions on the capabilities of products made by other than the manufacturer should be addressed to the suppliers of those products.





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(1P) P/N: 00P5098

