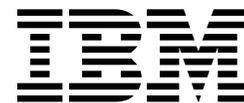


Installation Instructions



IBM 5Ux22D Tower-to-Rack Kit



Installation Instructions

Note:

Before using this information and the product it supports, be sure to read the general information in Appendix B, "Product warranty and notices," on page 29.

First Edition (July 2001)

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Safety

Before installing this product, read the Safety Information.

مح، يجب قراءة دات السلامة

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 přečtete 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 pečítajte 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.

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**

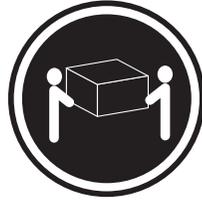
To Connect:

1. Turn everything OFF.
2. First, attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

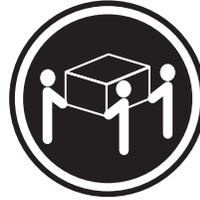
To Disconnect:

1. Turn everything OFF.
2. First, remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

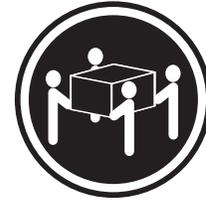
Statement 4



≥ 18 kg (39.7 lb)



≥ 32 kg (70.5 lb)



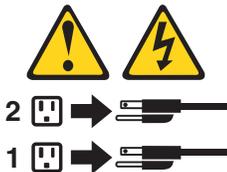
≥ 55 kg (121.2 lb)

CAUTION:
Use safe practices when lifting.

Statement 5



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



Statement 10



CAUTION:
Do not place any object weighing more than 82 kg (180 lb) on top of rack-mounted devices.



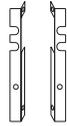
>82 kg (180 lb)

Chapter 1. 5Ux22D Tower-to-Rack Kit Introduction

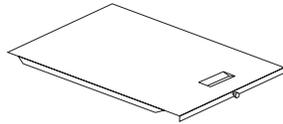
The IBM® 5Ux22D Tower-to-Rack Kit contains the parts needed to convert a 5U computer or server that is 55.88 cm (22 in.) deep from its tower orientation to a rack orientation. You can then install the computer or server into a rack cabinet that is at least 55.88 cm (22 in.) deep.

The following parts come with the 5Ux22D Tower-to-Rack Kit:

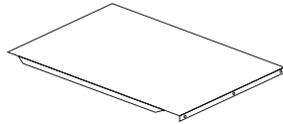
- Two chassis brackets



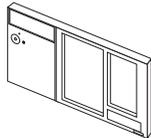
- One top cover, with captive thumbscrew



- One bottom cover



- One rack-model front bezel (for use with only the Netfinity® 5000 server)



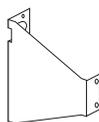
- One ribbon cable for operator LED panel (for use with only the Netfinity 5000 server)



- Four M3.5 x 7 mm screws



- One cable-arm bracket

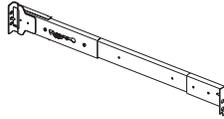


- Nine electromagnetic compatibility (EMC) replacement clips



- One rack mounting kit, which includes the following:

- Two slide-bracket assemblies



- Twelve cage nuts



- Twelve clip nuts



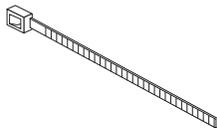
- Twelve M6 screws



- Ten M4 screws



- Ten cable ties



- One cable-management arm
- Rack Installation template and instructions

- *IBM 5Ux22D Tower-to-Rack Kit Installation Instructions* (this book)

What you will need

You will need the following items to install the tower-to-rack conversion kit on a computer or server:

- Flat-blade screwdriver
- Phillips screwdriver
- An 8 mm open-end or box wrench
- A 10 mm nut driver or a 10 mm open-end or box wrench

Before you begin

- Read the safety information provided with your computer or server.
- Read through these instructions and the rack installation instructions to familiarize yourself with the installation procedures.
- Inventory the kit items that are listed in the parts list beginning on page 1.
- Remove all media (diskettes, CDs, optical discs, or tapes) from the drives.

Chapter 2. Installing the Tower-to-Rack Kit on an IntelliStation

This section provides the information for converting your IntelliStation® computer from a tower to a rack-mounted system.

Note: In the Tower-to-Rack Kit, there are two parts that are not used, the front bezel and ribbon cable. These items are used only when converting a Netfinity 5000 server from a tower to a rack model. Do not attempt to use these parts on an IntelliStation computer.

Preparing your computer

To prepare your computer, complete the following steps.

1. Read “Safety” on page v and “Before you begin” on page 3.
2. Shut down the computer operating system.
3. Turn off the computer and disconnect all cables.

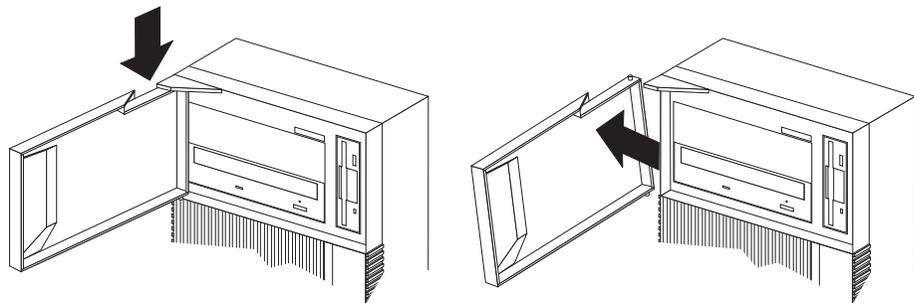
Note: For instructions on how to turn off your computer, refer to the documentation that comes with your computer.

Removing the drive door, covers, and feet

Complete the following steps to remove the drive door, covers, and feet from your computer.

1. Remove the drive door and covers.
 - a. Open the door covering the CD-ROM and floppy drives.
 - b. Push down on the top edge of the door nearest the hinge point and pull it out and away from the computer. Store the drive door in a safe location for future use.

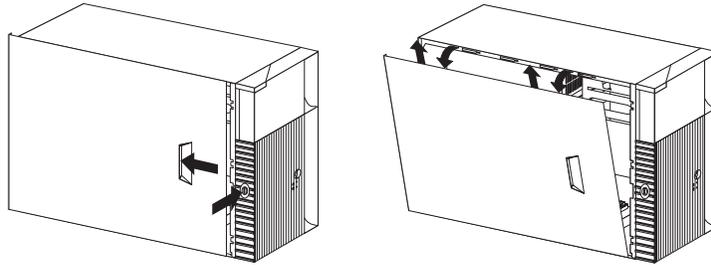
Note: The illustrations in this document might differ slightly from your hardware.



Note: In some rack cabinet models, the rack cabinet door might be prevented from closing when the drive door is installed. To ensure that the rack cabinet door closes properly, do not reinstall the drive door when the computer is installed in a rack cabinet.

- c. Push the release button on the left side of the computer.

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

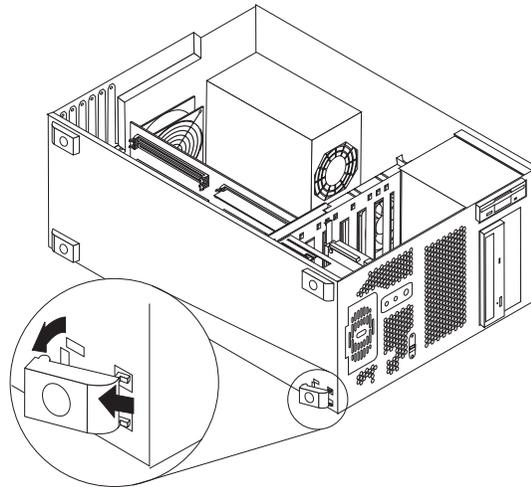


- d. Slide the left side cover toward the rear of the computer and remove it.
 - e. Remove the remaining four screws from the rear of the computer and store them in a safe location for use later.
 - f. Slide the right side cover toward the rear of the computer and remove it.
2. Lay the computer on its right side so that you can see the component side of the system board.

Note: With the computer laying on its right side, you should be able to see the PCI cards, memory, and microprocessor.

3. Remove the four feet from the bottom of the computer.

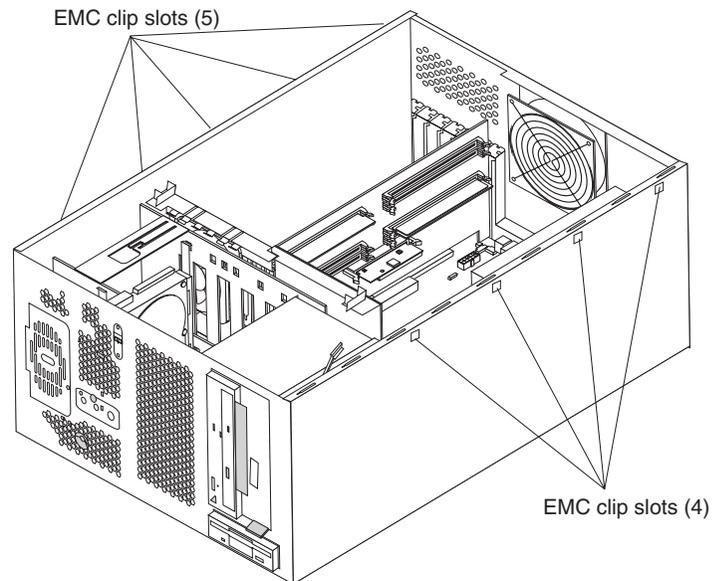
Note: The illustrations in this document might differ slightly from your hardware.



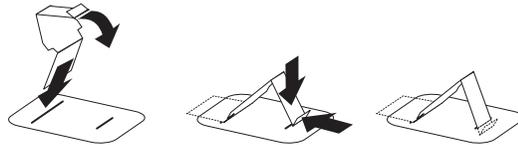
- a. Press in on the tab located on the front of each foot.
- b. Hold in the tab and rock the foot toward the rear of the computer.
- c. Pull the foot away from the bottom of the computer.
- d. Repeat steps 3a through 3c for the remaining feet.

4. Install the EMC clips in the EMC clip slots on the outside of the computer. Refer to the following illustrations.

Note: Install five EMC clips on the left side (in rack orientation) of the computer and four EMC clips on the right side (in rack orientation).



- a. Locate an EMC clip slot on the computer.
- b. Insert the large tab of the EMC clip into the large slot on the computer.
- c. Compress the EMC clip until the smaller tab can be inserted into its matching slot.



- d. Repeat steps 4a through 4c for each EMC clip.

Installing the kit hardware and covers

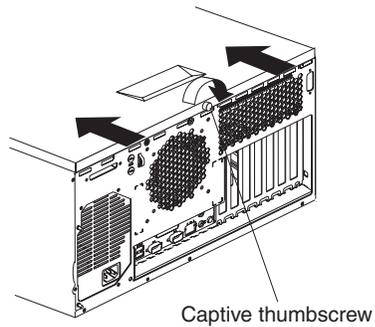
Complete the following steps to install the kit hardware and covers on the computer.

1. Install the top cover (in rack orientation) on the computer.

Note: The top cover can be identified by the captive thumbscrew mounted on it.

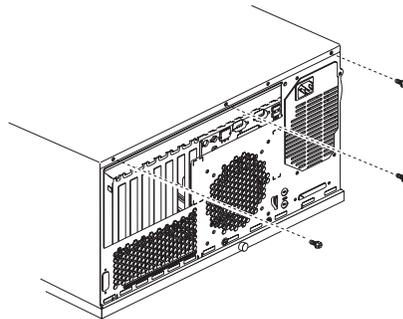
- a. Align the top cover of the computer, about 25 mm (1 in.) from the front of the computer.
- b. Hold the top cover against the computer and slide the cover toward the front of the computer.
- c. Turn the captive thumbscrew clockwise to secure the cover on the computer.

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



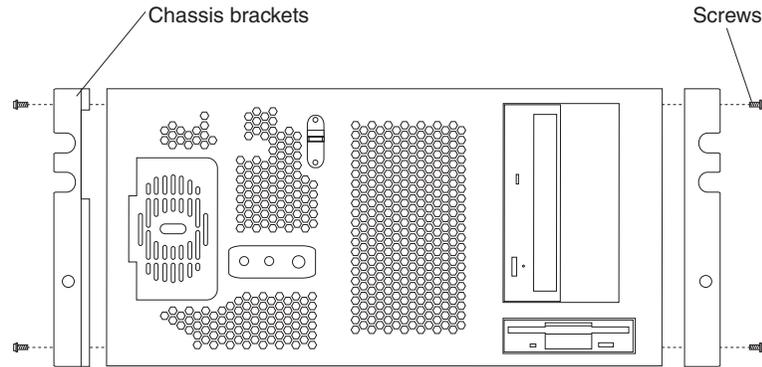
2. Install the bottom cover (in rack orientation) on the computer.

- a. Turn the computer over.
- b. Align the bottom cover with the frame of the computer.
- c. Press the cover onto the computer; then, slide the cover toward the front of the computer.
- d. Use three of the four screws that you removed in step 1e on page 6 to secure the cover to the computer.

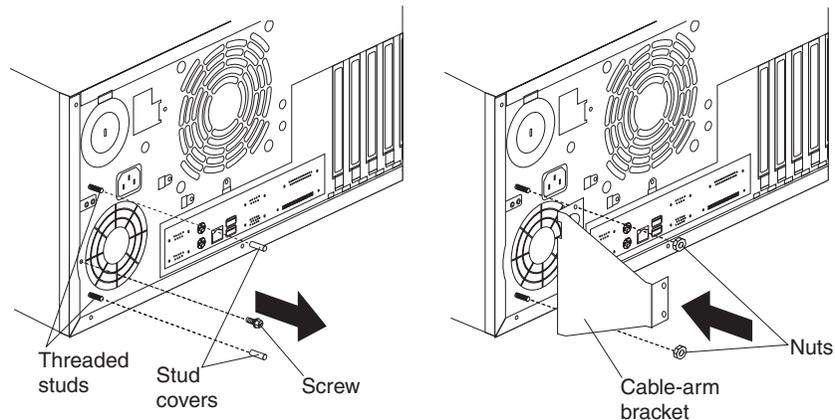


3. Install the chassis brackets.
 - a. Locate one of the chassis brackets that comes with this kit.
 - b. Orient the chassis bracket so that the two notches are at the top.
 - c. Use the locator pin on the chassis bracket to position the chassis bracket as shown.

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



- d. Use two M3.5 x 7 mm screws that come with this kit to bolt the chassis bracket to the side of the computer.
 - e. Repeat steps 3a through 3d for the second chassis bracket.
4. Attach the cable-arm bracket to the rear of the computer.
 - a. Remove the screw just to the left of the power supply fan and remove the stud covers from the two threaded studs, as shown in the following illustration.



- b. Align the holes in the cable-arm bracket with the threaded studs on the rear of the computer.
 - c. Use the two nuts that are taped to the inside of the bezel door to secure the cable-arm bracket to the computer.
5. Locate the rack mounting kit and instructions that come with this kit and mount the computer into your rack cabinet.

Chapter 3. Installing the Tower-to-Rack Kit on a Netfinity 5000

This section provides the information for converting your Netfinity 5000 server from a tower to a rack-mounted system.

Preparing your server

To prepare your server, complete the following steps.

1. Read “Safety” on page v and “Before you begin” on page 3.
2. Shut down the server operating system.
3. Turn off the server and disconnect all cables.

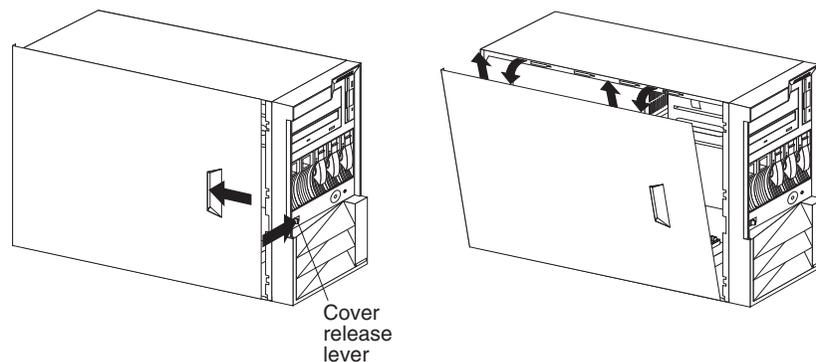
Note: For instructions on how to turn off your server, refer to the documentation that comes with your server.

Removing the covers, bezel, and feet

Complete the following steps to remove the covers, bezel, and feet from your server.

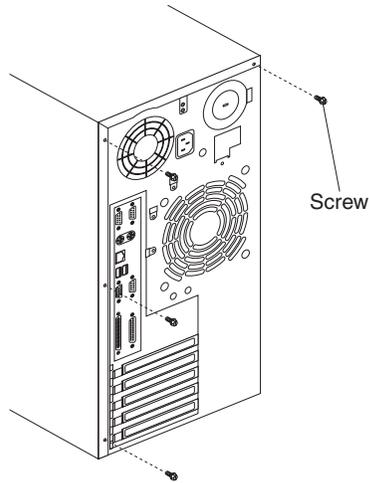
1. Remove the covers.
 - a. Locate the cover-release lever on the front of the server and slide it to the right.
 - b. Slide the left side cover back about 25 mm (1 in.); then, lift and remove it from the server.

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

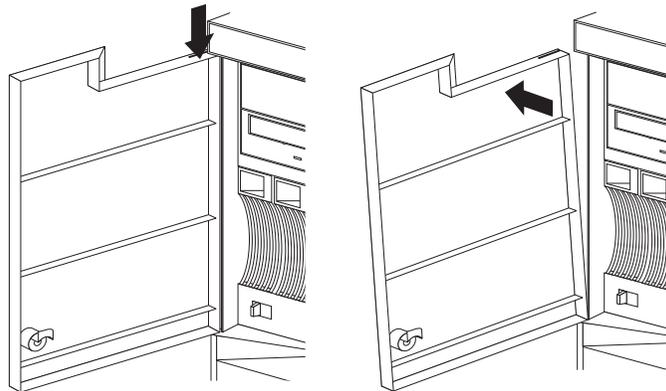


- c. Remove the three screws holding the cover from the rear of the server and store them in a safe location for future use.

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

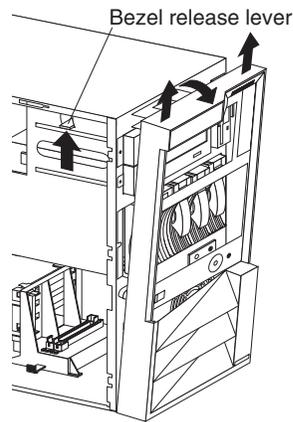


- d. Slide the right side cover toward the rear of the server and remove it from the server.
2. Remove the bezel.
 - a. Locate and unlock the key-lock button on the front of the bezel.
 - b. Open the server door and press down on the flange as shown.
 - c. While holding the flange down pull the top of the door toward you and lift the door off the hinge as shown.

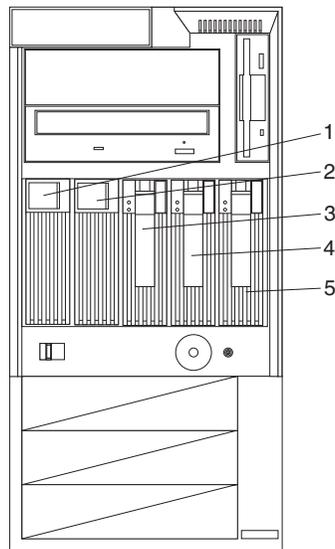


- d. Locate and press upward on the blue bezel-release lever. Refer to the following illustration for the location of the bezel-release lever.
- e. Grasping the bezel on each side, lift it upward slightly; then, pull it away from the server.

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



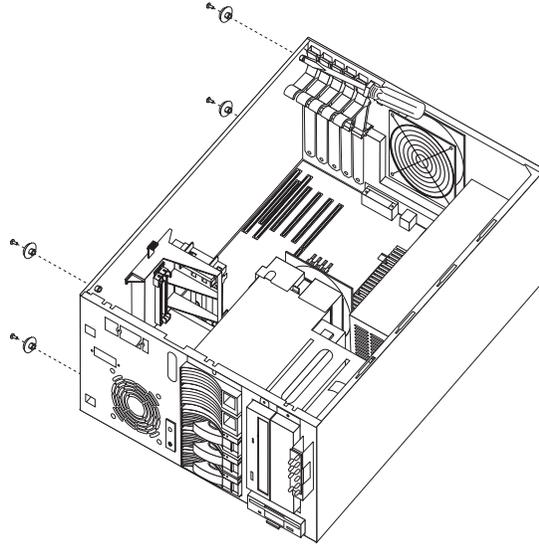
3. Write the bay numbers on labels and apply them to the hard disk drives (1 to 5, from left to right), as indicated in the following illustration. For example, if you have only three hard disk drives installed in bays 3, 4, and 5, they would be numbered 3, 4, and 5 respectively.



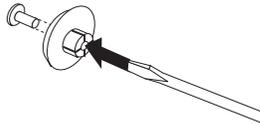
4. Lay the server on its right side.

5. Remove the four feet from the bottom of the server.

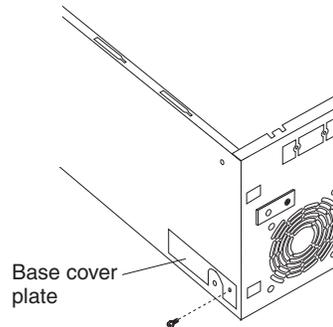
Note: Three of the feet are accessed from the inside of the server; the fourth is accessed outside the sever, near the expansion slots.



- a. Using a screwdriver, push the foot pin in the middle of the foot through the foot toward the outside of the server.

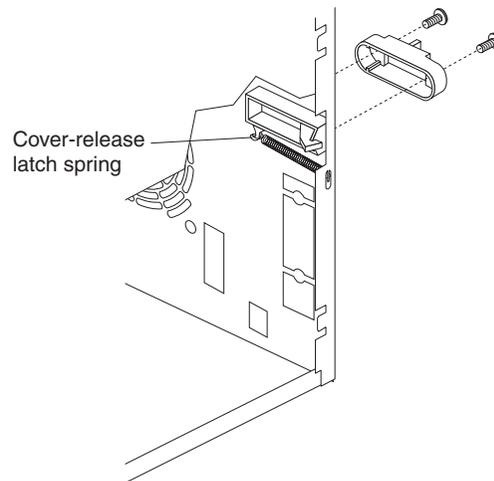


- b. Remove the foot from the server.
 - c. Repeat steps 5a and 5b for the remaining feet.
6. Remove the base cover plate from the server bottom.
 - a. Remove the screws holding the base cover plate in place.
 - b. Remove the plate from the server.



7. Remove the cover-release latch.
 - a. Remove the cover-release latch spring from the back of the cover-release latch and the hook on the edge of the server.
 - b. Remove the screws holding the cover-release latch on the server; then, remove the latch pieces from the server.

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



Relocating and installing hardware, covers, and bezel

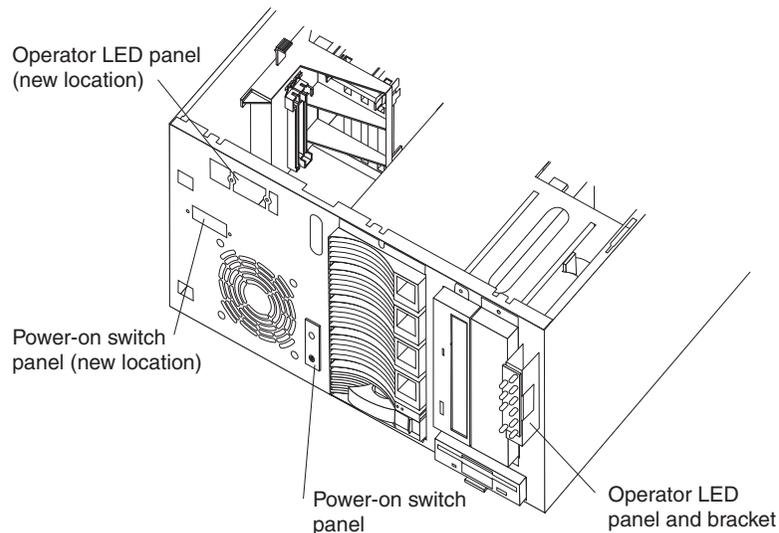
Complete the following steps to:

- Remove and relocate hardware
 - Install new hardware
 - Modify or prepare hardware items for rack operation
 - Check and swap SCSI IDs
1. Remove and relocate the operator LED panel.
 - a. Remove the screws that attach the operator LED panel to the LED panel bracket. Store the screws in a safe location for use later in this procedure.
 - b. Unplug the cable from the back of the operator LED panel.
 - c. Secure the operator LED panel in the upper left corner of the server using two M3 x 55 mm screws that were removed in step 1a.
 - d. Locate the new ribbon cable for the operator LED panel that comes with this kit.
 - e. Disconnect the existing operator LED panel ribbon cable from its connector (J29) on the system board.
 - f. Connect the new ribbon cable to the same connector (J29) on the system board and route the cable to the operator LED panel.

Note: The connectors are keyed to prevent improper installation. If you are having difficulties connecting the ribbon cable to the system board, turn the connector over and try again.
 - g. Connect the new ribbon cable to the back of the operator LED panel.

2. Remove the operator LED panel bracket from the server.
 - a. Remove the screw holding the operator LED panel bracket in place.
 - b. Slide the bracket toward the diskette drive and lift the bracket off the server front, out of the slots holding it.

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

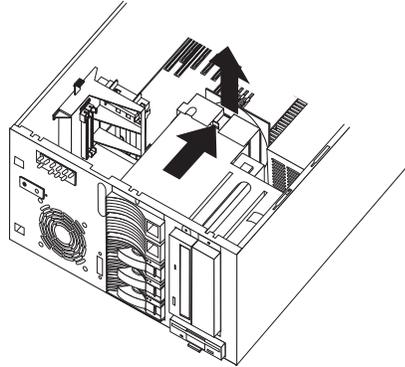


3. Remove and relocate the power-on switch panel.
 - a. Disconnect the cable for the power-on switch panel from its connector (J34) on the system board.
 - b. Remove the mounting screws from the power-on switch panel and store them in a safe location for use later in this procedure.
 - c. Carefully remove the power-on switch panel and cable.
 - d. Carefully thread the power-on switch panel cable through the hole at its new location on the server, just below the operator LED panel.

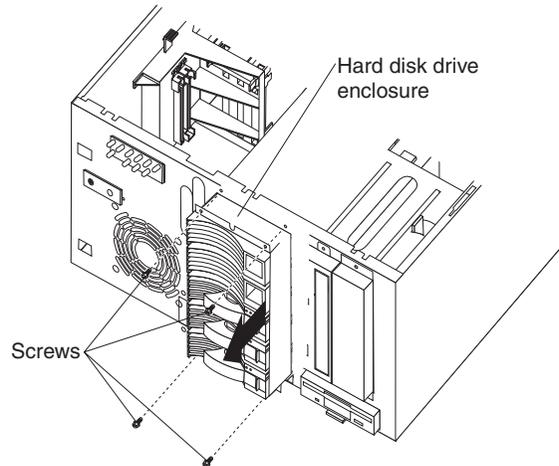
Note: Before securing the power-on switch panel, be sure that the power-on switch button is on the left and the reset button is on the right.
 - e. Secure the power-on switch panel to the server using two M3 x 55 mm screws that were removed in step 3b.
 - f. Reconnect the power-on switch panel cable to its connector (J34) on the system board.

Note: The connectors are keyed to prevent improper installation. If you are having difficulties connecting the ribbon cable to the system board, turn the connector over and try again.
4. Modify the CD-ROM drive for vertical operation.
 - a. Insert the end of a straightened paper clip into the manual tray-release opening and gently pull the tray open.
 - b. Depending on the CD-ROM drive model, pull or pivot the tabs in the tray corners toward the center of the tray.

5. Remove the fan from the hard disk drive backplane.
 - a. Push the fan release lever away from the hard disk drive enclosure.
Note: The illustrations in this document might differ slightly from your hardware.



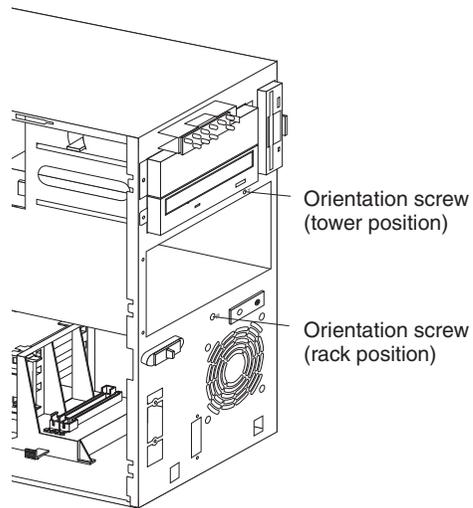
- b. Pull the fan upward about 50 mm (2 in.).
 - c. Disconnect the fan cable from the system board (press on the release tab on the fan cable to release it from the connector on the system board).
 - d. Remove the fan completely from the server. Store it in a safe location for use later.
6. Remove the hard disk drive enclosure.
 - a. Disconnect the cables from the hard disk drive backplane.
 - b. Remove the screws from the front of the hard disk drive enclosure; then, remove the enclosure from the server.



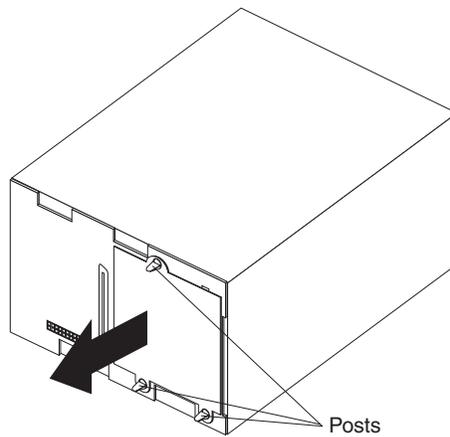
- c. Store the enclosure and the screws in a safe location for future use.

- d. Move the orientation screw from the tower position to the rack position as shown.

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



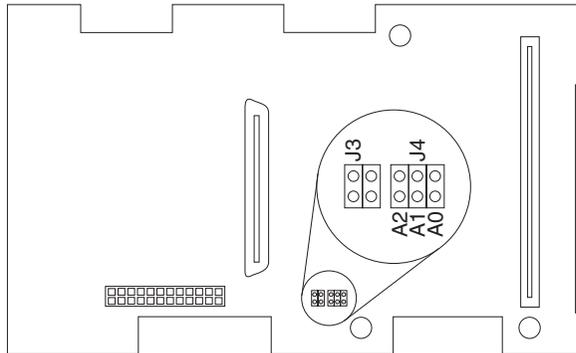
7. Change the SCSI IDs on the hot-swap bays by changing the A0 jumper on the hard disk drive backplane.
 - a. Release the tip of each of the three posts holding the daughterboard.



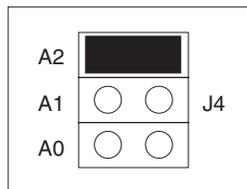
- b. Remove the daughterboard from the hard disk drive backplane and set it aside on a nonconductive surface.

- c. Locate jumper block J4 on the hard disk drive backplane.

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



- d. Remove the jumper from A0 while ensuring that the jumper on A2 remains in place.

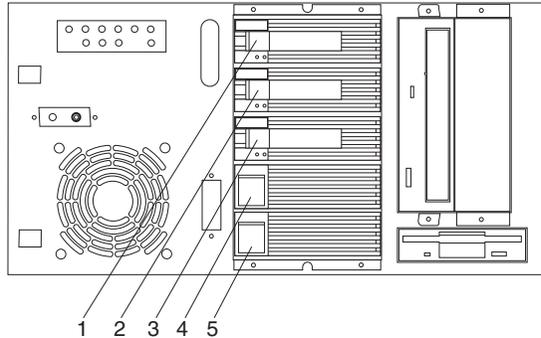


- e. Position the daughterboard on the hard disk drive backplane. Press gently but firmly until the daughterboard is securely seated and the posts hold the board in place.
8. Reinstall the hard disk drive enclosure in the server.
 - a. Push the hard disk drive enclosure straight into the opening in the server front.

Note: If the hard disk drive enclosure does not fit flush against the front of the server, remove the enclosure from the server and rotate it clockwise 180 degrees; then, reinsert the enclosure into the server.
 - b. Secure the hard disk drive enclosure in place using the screws you removed in step 6b on page 17.
 - c. Reconnect the cables to the hard disk drive backplane.
 - d. Remove the hard disk drives from the server.

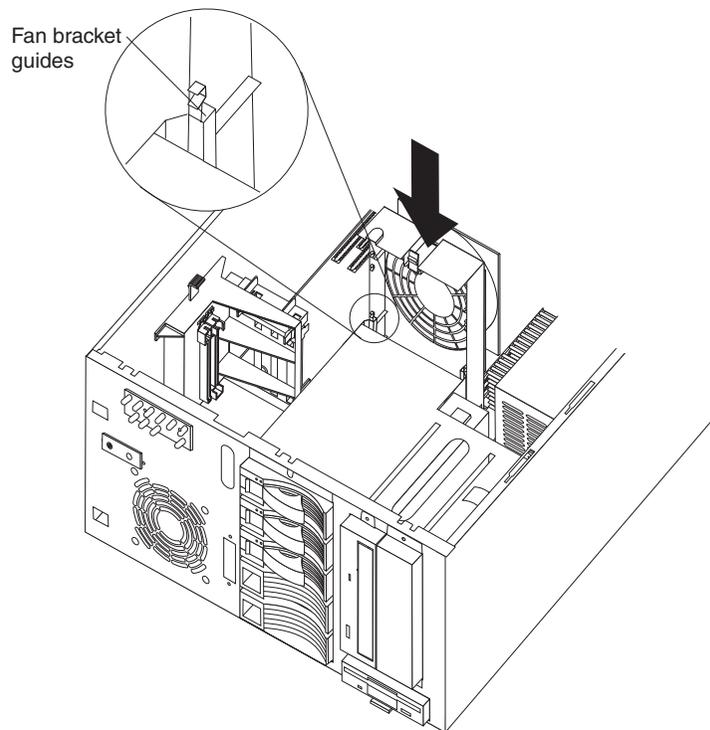
- e. Reinstall the hard disk drives in the server bays to correspond with the rack-model bay numbering.

Note: The hard disk drive bays are now numbered one through five from top to bottom as shown. Install the drive you numbered one (for tower bay one) to the top bay (rack bay one), move the drive you numbered two to rack bay two, and so forth.



9. Reinstall the fan in the server.

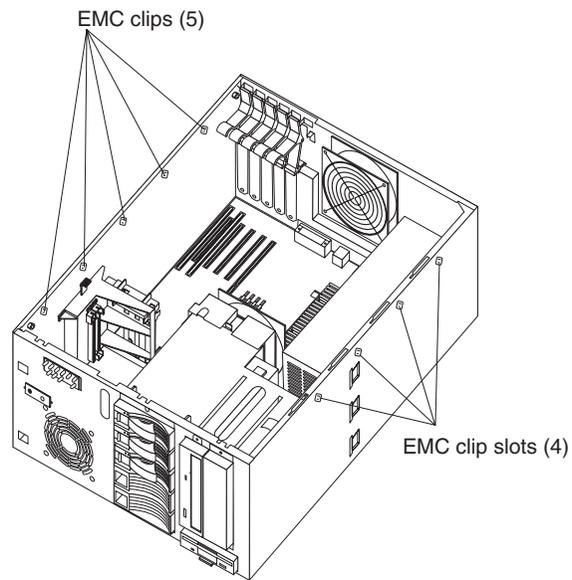
- a. Align the fan with the fan bracket guides.



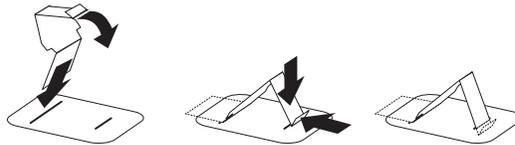
- b. Push the fan down toward the system board about 50 mm (2 in.).
- c. Reconnect the fan cable to the connector (J13) on the system board.
Note: Make sure that no cables are trapped or crimped by the fan.
- d. Push the fan down until it clicks into place.

10. Install the nine EMC clips that come with this kit onto the server. Refer to the following illustrations.

Note: Install five EMC clips on the left side of the server and four EMC clips on the right side.

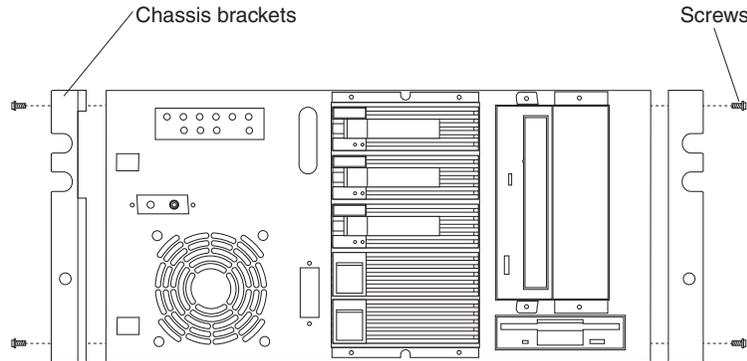


- a. Locate an EMC clip slot on the server.
- b. Insert the large tab of the EMC clip into the large slot on the server.
- c. Compress the EMC clip until the smaller tab can be inserted into its matching slot.

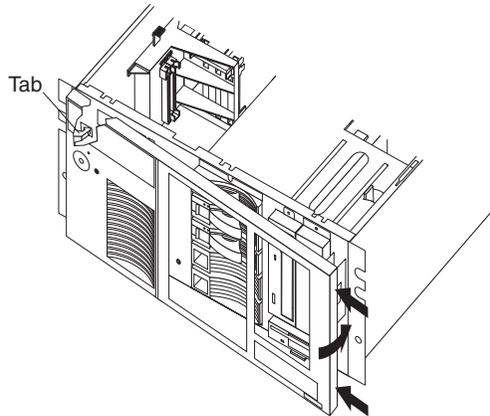


- d. Repeat steps 10a through 10c for each EMC clip.

11. Install the chassis brackets onto the server.
 - a. Locate one of the chassis brackets that comes with this kit.
 - b. Orient the chassis bracket so that the two notches are at the top.



- c. Use the locator pin on the chassis bracket to position the chassis bracket as shown.
 - d. Use two M3.5 x 7 mm screws that come with this kit to bolt the chassis bracket to the side of the server.
 - e. Repeat steps 11a through 11d for the second chassis bracket.
12. Install the new bezel.
 - a. Locate the new bezel that comes with the kit.
 - b. Insert the two bottom tabs into the slots located on the front left of the server.



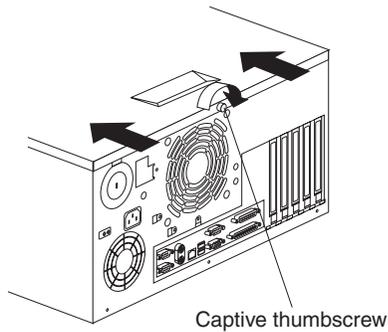
- c. Push the right side of the bezel inward toward the front panel of the server until it snaps into place.

13. Install the top and bottom covers.

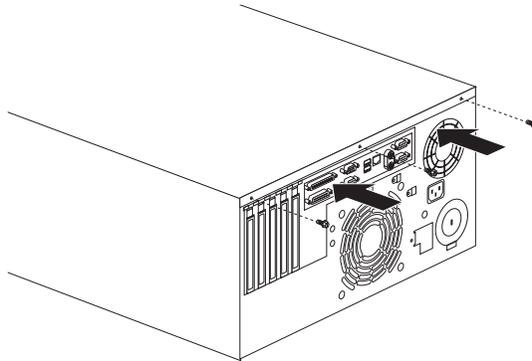
- a. Locate the two covers that come with this kit.

Note: The top cover can be identified by the captive thumbscrew mounted on it.

- b. Align the top cover of the server, about 25 mm (1 in.) from the front of the server.
- c. Hold the top cover against the server and slide the cover toward the front of the server.
- d. Turn the captive thumbscrew clockwise to secure the cover on the server.

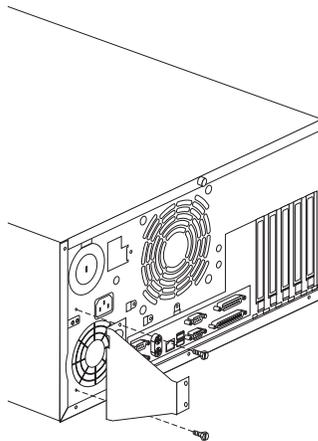


- e. Turn the server over so that it is positioned as shown.



- f. Align the bottom cover with the frame of the server.
- g. Press the cover onto the server; then, slide the cover toward the front of the server.
- h. Use the three screws that you removed in step 1c on page 12 to secure the cover to the server.
- i. Return the server to its previous position (top side up).

14. Attach the cable-arm bracket to the rear of the server.
 - a. On the rear of the server, remove the two screws located just above and below the power supply fan, as shown in the following illustration.



- b. Locate the cable-arm bracket that comes with this kit.
 - c. Align the holes in the cable-arm bracket with the screw holes on the rear of the server.
 - d. Use the screws you removed in step 14a to secure the cable-arm bracket to the server.
15. Your server is now ready to be installed in the rack. Refer to the rack mounting kit and installation instructions that come with this tower-to-rack kit to install your server into a rack cabinet.

Appendix A. Getting information, help, and service

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 section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your computer, and whom to call for service should it be necessary.

Getting information

Information about your IBM server product and preinstalled software, if any, is available in the documentation that comes with your server. That documentation includes printed books, online books, README files, and help files. In addition, information about IBM products is available on the World Wide Web and through the IBM Automated Fax System.

Using the World Wide Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM products and support. The address for the IBM Personal Computing home page is <http://www.ibm.com/pc/>.

You can find support information for your IBM products at <http://www.ibm.com/pc/support/>.

If you click **Profile** from the support page, you can create a customized support page that is specific to your hardware, complete with Frequently Asked Questions, Parts Information, Technical Hints and Tips, and Downloadable Files. In addition, you can choose to receive e-mail notifications whenever new information becomes available about your registered products.

You also can order publications through the IBM Publications Ordering System at <http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>.

Getting information by fax

If you have a touch-tone telephone and access to a fax machine, in the U.S. and Canada, you can receive, by fax, marketing and technical information on many topics, including hardware, operating systems, and local area networks (LANs).

You can call the IBM Automated Fax System 24 hours a day, 7 days a week. Follow the recorded instructions, and the requested information will be sent to your fax machine. In the U.S. and Canada, to access the IBM Automated Fax System, call 1-800-426-3395.

Getting help and service

If you have a problem with your server product you will find a wide variety of sources available to help you.

Using the documentation and diagnostic programs

Many problems can be solved without outside assistance. If you experience a problem with your server product, the first place to start is the troubleshooting information in your IBM documentation. If you suspect a software problem, see the documentation, including README files and online help, that comes with the operating system or application program.

Most IBM server products come with a set of diagnostic programs that you can use to help you identify hardware problems. See the troubleshooting information in your IBM documentation for instructions on 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/pc/support/> and follow the instructions.

Calling for service

If you have tried to correct the problem yourself and still need help, during the warranty period, you can get help and information by telephone through the IBM HelpCenter®. The following services are available during the warranty period:

- **Problem determination** - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- **IBM hardware repair** - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service.
- **Engineering Change management** - Occasionally, there might be changes that are required after a product has been sold. IBM or your reseller, if authorized by IBM, will make selected Engineering Changes (ECs) available that apply to your hardware.

The following items are not covered:

- Replacement or use of non-IBM parts or nonwarranted IBM parts. All warranted parts contain a 7-character identification in the format IBM FRU XXXXXXX.
- Identification of software problem sources.
- Configuration of BIOS as part of an installation or upgrade.
- Changes, modifications, or upgrades to device drivers.
- Installation and maintenance of network operating systems (NOS).
- Installation and maintenance of application programs.

Refer to your IBM hardware warranty for a full explanation of IBM warranty terms. Be sure to retain your proof of purchase to obtain warranty service.

In the U.S. and Canada, these services are available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9:00 a.m. to 6:00 p.m.

Note: Response time will vary depending on the number and complexity of incoming calls.

In addition, you are eligible for IBM Start Up Support for 90 days after installation. This service provides assistance for:

- Setting up your network operating system
- Installing and configuring interface adapters
- Installing and configuring network adapters

Please have the following information ready when you call:

- Machine type and model
- Serial numbers of your IBM hardware products
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information

Phone numbers are subject to change without notice. For the most up-to-date phone numbers, go to <http://www.ibm.com/pc/support/> and click **Support Phone List**.

Country		Telephone number
Austria	Österreich	01-24 592 5901
Belgium - Dutch	Belgie	02-210 9820
Belgium - French	Belgique	02-210 9800
Canada	Toronto only	416-383-3344
Canada	Canada - all other	1-800-565-3344
Denmark	Danmark	45 20 82 00
Finland	Suomi	09-22 931 840
France	France	02 38 55 74 50
Germany	Deutschland	07032-1549 201
Ireland	Ireland	01-815 9202
Italy	Italia	02-482 9202
Luxembourg	Luxembourg	298-977 5063
Netherlands	Nederland	020-514 5770
Norway	Norge	23 05 32 40
Portugal	Portugal	21-791 51 47
Spain	España	91-662 49 16
Sweden	Sverige	08-477 4420
Switzerland	Schweiz/Suisse/Svizzera	058-333 0900
United Kingdom	United Kingdom	01475-555 055
U.S.A. and Puerto Rico	U.S.A. and Puerto Rico	1-800-772-2227

In all other countries, contact your IBM reseller or IBM marketing representative.

Purchasing additional services

During and after the warranty period, you can purchase additional services, such as support for IBM and non-IBM hardware, operating systems, and application programs; network setup and configuration; upgraded or extended hardware repair services; and custom installations. Service availability and service name might vary by country.

For more information about these services, contact your IBM marketing representative.

Appendix B. Product warranty and notices

This appendix contains warranty and emission notices. It also contains trademarks and general-information notices.

Warranty information

This section contains the warranty period for your product and the IBM Statement of Limited Warranty.

Warranty period

Contact your place of purchase for warranty service information. Some IBM Machines are eligible for on-site warranty service depending on the country or region where service is performed.

Machine - IBM 5Ux22D Tower-to-Rack Kit

Warranty period - Three years

IBM Statement of Limited Warranty

Z125-4753-06 8/2000

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications ("Specifications"). The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not

responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for a Machine, contact IBM or your reseller. If you do not register your Machine with IBM, you may be required to present proof of purchase.

During the warranty period, IBM or your reseller, if approved by IBM to provide warranty service, provides without charge certain types of repair and exchange service to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. At its discretion, IBM or your reseller will 1) either repair or exchange the failing Machine and 2) provide the service either at your location or a service center. IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

Some parts of IBM Machines are designated as Customer Replaceable Units (called "CRUs"), e.g., keyboards, memory, or hard disk drives. IBM ships CRUs to you for replacement by you. You must return all defective CRUs to IBM within 30 days of your receipt of the replacement CRU. You are responsible for downloading designated Machine Code and Licensed Internal Code updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides;
 - b. secure all programs, data, and funds contained in a Machine;
 - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations; and
 - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months' charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST SAVINGS, EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Governing Law

Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Part 2 - Country-unique Terms

AMERICAS

BRAZIL

Governing Law: *The following is added after the first sentence:*

Any litigation arising from this Agreement will be settled exclusively by the court of Rio de Janeiro.

NORTH AMERICA

Warranty Service: *The following is added to this Section:*

To obtain warranty service from IBM in Canada or the United States, call 1-800-IBM-SERV (426-7378).

CANADA

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*

laws in the Province of Ontario.

UNITED STATES

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*

laws of the State of New York.

ASIA PACIFIC

AUSTRALIA

The IBM Warranty for Machines: *The following paragraph is added to this Section:*

The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability: *The following is added to this Section:*

Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*

laws of the State or Territory.

CAMBODIA, LAOS, AND VIETNAM

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*

laws of the State of New York.

The following is added to this Section:

Disputes and differences arising out of or in connection with this Agreement shall be finally settled by arbitration which shall be held in Singapore in accordance with the rules of the International Chamber of Commerce (ICC). The arbitrator or arbitrators designated in conformity with those rules shall have the power to rule on their own

competence and on the validity of the Agreement to submit to arbitration. The arbitration award shall be final and binding for the parties without appeal and the arbitral award shall be in writing and set forth the findings of fact and the conclusions of law.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator.

The two arbitrators appointed by the parties shall appoint a third arbitrator before proceeding upon the reference. The third arbitrator shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the ICC. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

The English language version of this Agreement prevails over any other language version.

HONG KONG AND MACAU

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*

laws of Hong Kong Special Administrative Region.

INDIA

Limitation of Liability: *The following replaces items 1 and 2 of this Section:*

1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

JAPAN

Governing Law: *The following sentence is added to this Section:*

Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

NEW ZEALAND

The IBM Warranty for Machines: *The following paragraph is added to this Section:*

The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: *The following is added to this Section:*

Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

PEOPLE'S REPUBLIC OF CHINA (PRC)

Governing Law: *The following replaces this Section:*

Both you and IBM consent to the application of the laws of the State of New York (except when local law requires otherwise) to govern, interpret, and enforce all your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Any disputes arising from or in connection with this Agreement will first be resolved by friendly negotiations, failing which either of us has the right to submit the dispute to the China International Economic and Trade Arbitration Commission in Beijing, the PRC, for arbitration in accordance with its arbitration rules in force at the time. The arbitration tribunal will consist of three arbitrators. The language to be used therein will be English and Chinese. An arbitral award will be final and binding on all the parties, and will be enforceable under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958).

The arbitration fee will be borne by the losing party unless otherwise determined by the arbitral award.

During the course of arbitration, this Agreement will continue to be performed except for the part which the parties are disputing and which is undergoing arbitration.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

THE FOLLOWING TERMS APPLY TO ALL EMEA COUNTRIES:

The terms of this Statement of Limited Warranty apply to Machines purchased from IBM or an IBM reseller.

Warranty Service:

If you purchase an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM. If you purchase an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchase an IBM Machine in a Middle Eastern or African country, you may obtain warranty service for that Machine from the IBM entity within the country of purchase, if that IBM entity provides warranty service in that country, or from an IBM reseller, approved by IBM to perform warranty service on that Machine in that country. Warranty service in Africa is available within 50 kilometers of an IBM authorized service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM authorized service provider.

Governing Law:

The applicable laws that govern, interpret and enforce rights, duties, and obligations of each of us arising from, or relating in any manner to, the subject matter of this Statement, without regard to conflict of laws principles, as well as Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided, except that in 1) Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Former Yugoslav Republic of Macedonia, Romania,

Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan, the laws of Austria apply; 2) Estonia, Latvia, and Lithuania, the laws of Finland apply; 3) Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Djibouti, Democratic Republic of Congo, Equatorial Guinea, France, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Mali, Mauritania, Morocco, Niger, Senegal, Togo, and Tunisia, this Agreement will be construed and the legal relations between the parties will be determined in accordance with the French laws and all disputes arising out of this Agreement or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 4) Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe, this Agreement will be governed by English Law and disputes relating to it will be submitted to the exclusive jurisdiction of the English courts; and 5) in Greece, Israel, Italy, Portugal, and Spain any legal claim arising out of this Statement will be brought before, and finally settled by, the competent court of Athens, Tel Aviv, Milan, Lisbon, and Madrid, respectively.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:

AUSTRIA AND GERMANY

The IBM Warranty for Machines: *The following replaces the first sentence of the first paragraph of this Section:*

The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:

The minimum warranty period for Machines is six months. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: *The second paragraph does not apply.*

Warranty Service: *The following is added to this Section:*

During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Limitation of Liability: *The following paragraph is added to this Section:*

The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2:

IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

EGYPT

Limitation of Liability: *The following replaces item 2 in this Section:*

as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

Applicability of suppliers and resellers (unchanged).

FRANCE

Limitation of Liability: *The following replaces the second sentence of the first paragraph of this Section:*

In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: *(items 1 and 2 unchanged)*.

IRELAND

Extent of Warranty: *The following is added to this Section:*

Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: *The following replaces items one and two of the first paragraph of this Section:*

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and
2. the amount of any other actual direct damages, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section:

IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY

Limitation of Liability: *The following replaces the second sentence in the first paragraph:*

In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than:

1. *(unchanged)*
2. as to any other actual damage arising in all situations involving nonperformance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the third paragraph of this Section:

Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: *(items 1 and 2 unchanged)* 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND

Limitation of Liability: *The following is added to this Section:*

IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

UNITED KINGDOM

Limitation of Liability: *The following replaces items 1 and 2 of the first paragraph of this Section:*

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim;

The following item is added to this paragraph:

3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section:

IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

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