



IBM Netfinity 5Ux24D Tower-to-Rack Kit

Installation Instructions



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Note

Before using this information and the product it supports, please be sure to read the general information under "Product warranties and notices" on page 22.

Second Edition (April 2000)

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Safety information



Before installing this product, read the Safety Information.

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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)。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

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.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

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.

安裝本產品之前，請先閱讀「安全資訊」。

5Ux24D Tower-to-Rack Kit Introduction

The IBM® Netfinity® 5Ux24D Tower-to-Rack Kit converts a 5U server that is 61.0 cm (24 in.) deep from a tower model to a rack model. You can then install the server into a rack cabinet that is at least 61.0 cm (24 in.) deep.

The following parts come with the 5Ux24D Tower-to-Rack Kit:

- Two release-latch-bracket assemblies (one left and one right)
- Two server covers
- One rack-model trim bezel
- Two rack-support wheels
- Two slide rails
- One cable-management arm (comes partially assembled):
 - Two rigid cable-management arms
 - One flexible cable-management arm
 - One hinge bracket
 - Four hinge pins
- One LED panel cable (required for some servers)
- Cable straps
- Miscellaneous hardware kit (includes screws, cage nuts, and clip nuts to install the server in a rack cabinet)
- *IBM Safety Information* booklet
- One rack installation template
- One or more system-specific service labels
- One *IBM Netfinity 5600 Hot-Plug SCSI Setup Utility* diskette
- This documentation

Note: The illustrations in this documentation might be slightly different from your hardware.

Tool requirements

You will need the following tools to install the 5Ux24D Tower-to-Rack Kit:

- A small flat-blade screwdriver
- A medium phillips screwdriver
- An 8-mm open-end or box wrench
- A 10-mm nut driver or a 10-mm open-end or box wrench

Installation overview

Use the following general steps to prepare your server and install the 5Ux24D Tower-to-Rack Kit:

- 1** Follow the instructions in “Preparing the server for rack installation” on page 3 to prepare your server.
- 2** Follow the instructions in “Installing the server in a rack cabinet” on page 14 to install your server.
- 3** Attach all cables and neatly route them before turning on your server.

Preparing the server for rack installation

Use the following steps to prepare your server for rack installation:

1. Refer to your server documentation for detailed information.
2. Shut down the server operating system and remove all media from the drives, such as diskettes, CDs, optical disks, or tapes.

1



DANGER

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

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

To Connect:

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.

3. Turn Off the server and any attached devices.
4. Disconnect all power cords from the server and electrical outlets.
5. Disconnect all communication cables from external devices that are connected to your server.
6. Note the location of any remaining cables; then, disconnect all other cables from the server.
7. Unlock the server door and press down on the flange at the top edge of the door; then, swing the door forward and lift it away from the server and store the door for potential future use.

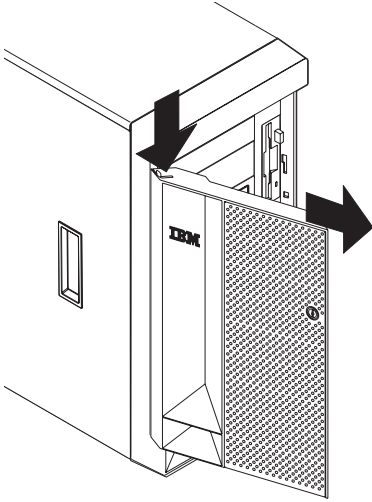


Figure 1. Removing the server door

8. Remove the left-side cover as shown below:
 - a. Locate the release lever **A** on the front of the server and slide it to the right.

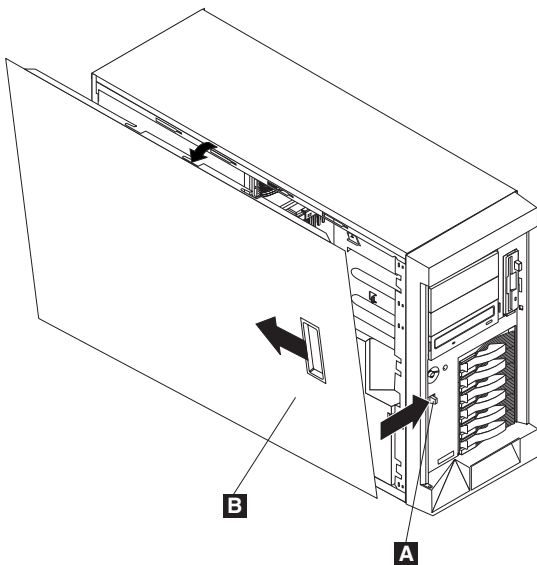


Figure 2. Removing the left-side cover

- b. Slide the left-side cover towards the back of the server about 25 mm (1 in.); then, lift the cover away from the server.

Note: Save the cover to refer to the system service label on the inside of the cover.

9. Remove the server bezel as shown below:

- a. Locate the blue bezel-release lever **B**, on the left side of the server near the top front corner, and move it upward.

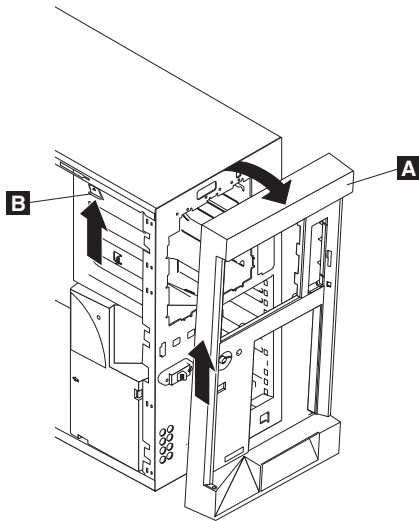


Figure 3. Removing the server bezel

- b. Swing the bezel **A** away from the server; then, lift the bezel tabs out of the tab openings on the bottom of the server to remove the bezel from the server.

Store the bezel for potential future use.

10. Remove the right-side cover as shown below:

- a. From the rear of the server, remove the four screws **B** that hold the cover **A** in place.

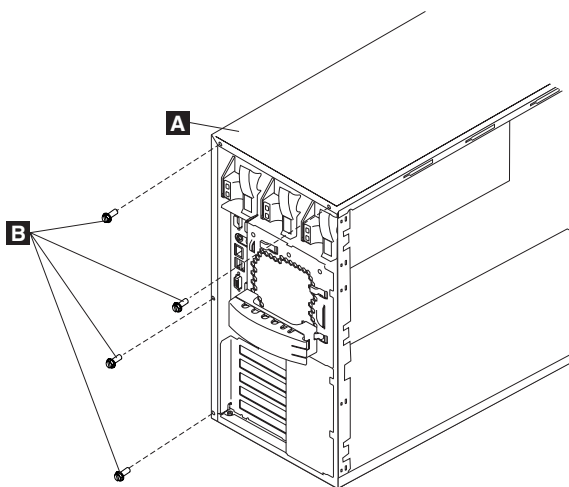


Figure 4. Removing the right-side cover

- b. Slide the cover toward the rear of the server about 25 mm (1 in.); then, lift the cover away from the server and store it for potential future use.

11. Install the new bottom cover **A** that comes with this kit:

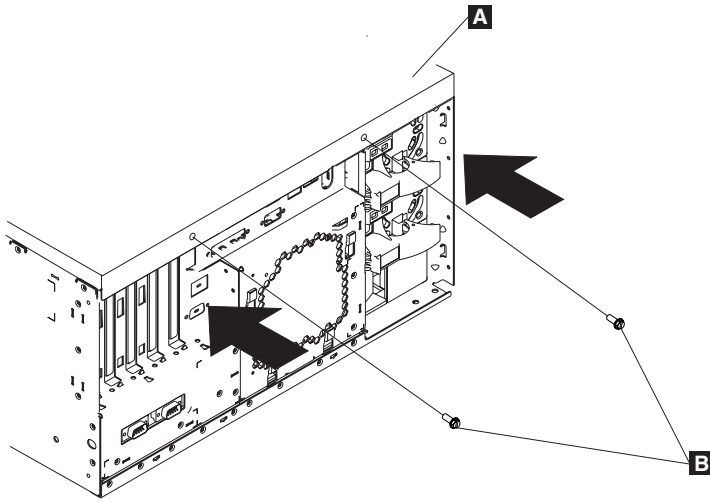


Figure 5. Installing the new bottom cover

a. Carefully turn the server top-side down on a flat surface; then, select one of the server covers to use as the bottom cover.

Note: Both covers are the same, and you can use either one for the top or bottom cover. You will install the other one later as the server top cover.

b. Align the bottom cover **A** with the frame of the server; then, slide the cover toward the front of the server, making sure that the tabs on the rear of the cover fit into the slots on the rear of the server.

c. Secure the bottom cover in place with the two screws **B** that come with this kit.

12. Carefully turn the server top-side up on a flat surface; then, remove the four feet **A** from the server.

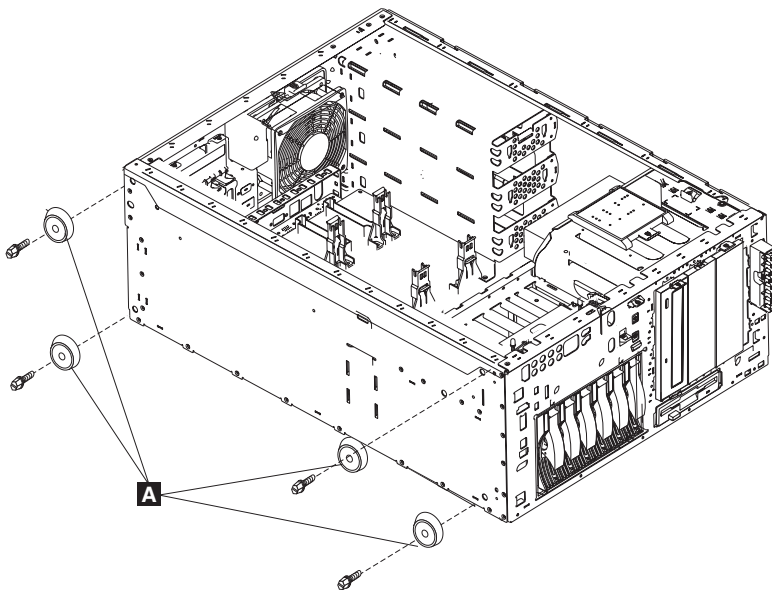


Figure 6. Removing the server feet

13. Move power-switch panel **A** to its new location **B** :

Note: You will need to temporarily remove any fan assemblies located at the front of the server. To remove a fan assembly, release the latch that secures the assembly and carefully lift it from the server.

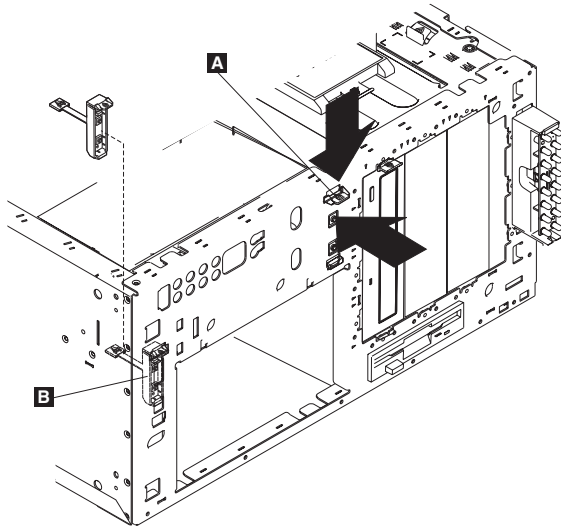


Figure 7. Moving the power-switch panel

- a. Remove the hard disk drives, noting the SCSI ID assigned to each drive as you remove them.
- b. Remove the power-switch panel **A** by pressing down and inward on the top blue tab.
- c. Align the panel with its new location **B** , from the inside of the server; then, place the square end of the power-switch panel into the bottom opening.
- d. Press the other end of the power-switch panel toward the front of the server until it snaps into place.

14. Press firmly on the bottom of the LED panel bracket **A** and remove it so that you can move it to the new location **B** .

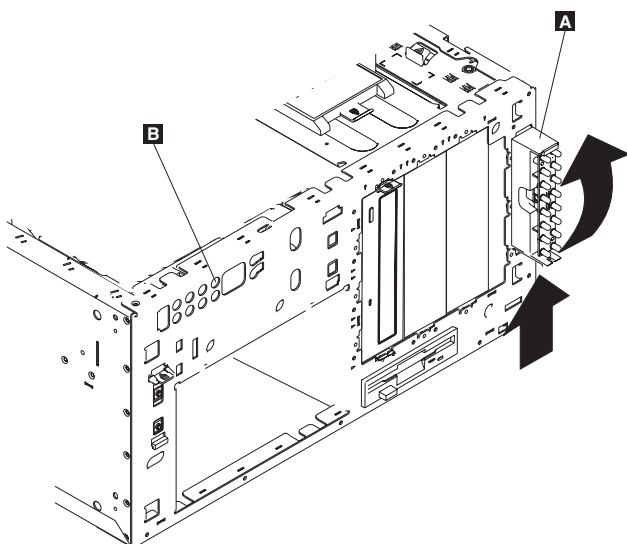


Figure 8. Removing the LED panel

15. For Netfinity 5600 servers, you must disconnect the LED panel cable from the LED panel; otherwise, skip to step 16 on page 9.

a. Remove the two screws **A** that hold the LED panel assembly together.

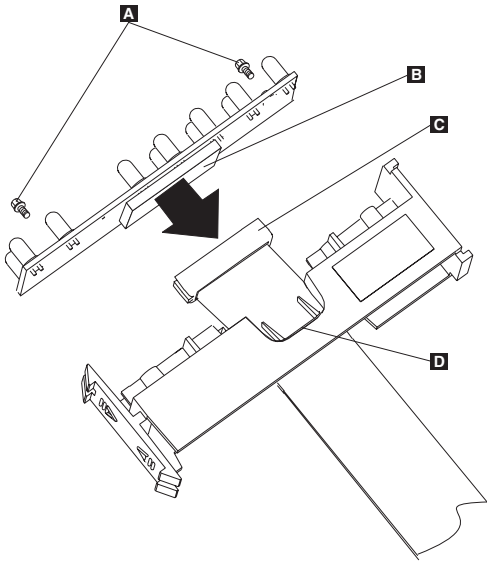


Figure 9. Removing the existing cable from the LED panel assembly

b. Carefully unplug the connector **C** from the LED panel **B**.

c. Gently push the connector through the opening **D**.

Note: Be careful not to catch the LED connector on the two retention latches inside of the opening on the bracket.

d. Gently pull the cable toward the rear of the server until the cable is free of the non-hot-swap bay area; then, release the cable from the cable clip on the right side of the server.

e. If your LED panel cable is long enough to reach the new position for the LED panel assembly, skip to step 17 on page 10 to continue the installation; otherwise, you must replace the existing LED panel cable with the longer one that comes with this kit.

f. Disconnect the cables that plug into **J8** **E** and **J10** **A** on the processor board.

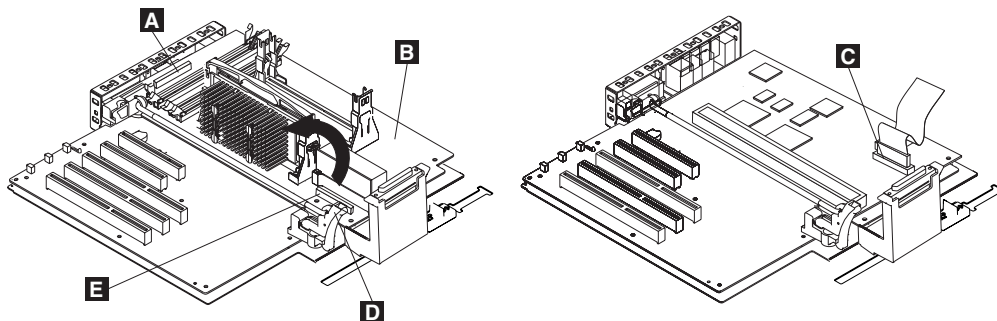


Figure 10. Removing the processor board to install the new cable

g. Release the processor board latch lever **D**; then, lift the processor board **B** out of the way.

Note: Be careful not to disconnect any other cables.

h. Disconnect the LED panel cable from **J29** **C** on the system board, just underneath where you lifted the processor board.

- i. Attach the longer LED panel cable that comes with this kit to **J29**.
 - j. Align the processor board with the connector on the system board (use the alignment pin on the system board connector as a guide) and carefully seat the processor board.
- Note:** Do not force the processor board into place.
- k. Press the processor board latch lever to lock the board into place; then, press down on the processor board to ensure proper seating.
 - l. Reconnect the processor board cables that you removed in step 15f on page 8.
 - m. Skip to step 17 on page 10 to continue the installation.

16. For Netfinity 5100 servers, you must disconnect the other end of the cable from the system board connector **C**.

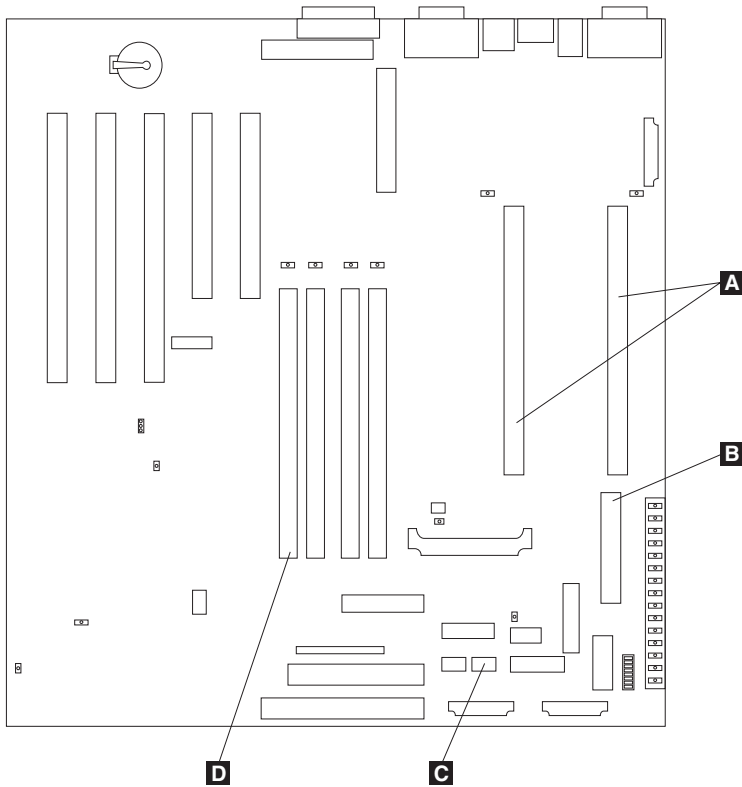


Figure 11. Locating the LED panel cable connector on the system board

Note: The microprocessor connectors **A**, main power connector **B**, and DIMM sockets **D** are shown to assist you in locating the LED panel cable connector **C**.

Pull the cable all the way through the opening in the server at the LED panel old position; then, reconnect the cable to the system board connector **C**, making sure that the connector detent is facing toward the front of the server, and continue with step 17 on page 10.

17. Run the LED panel cable along the top of the hard disk drive (HDD) backplane assembly; then, tuck the cable under the protrusions at the rear of the HDD backplane assembly.

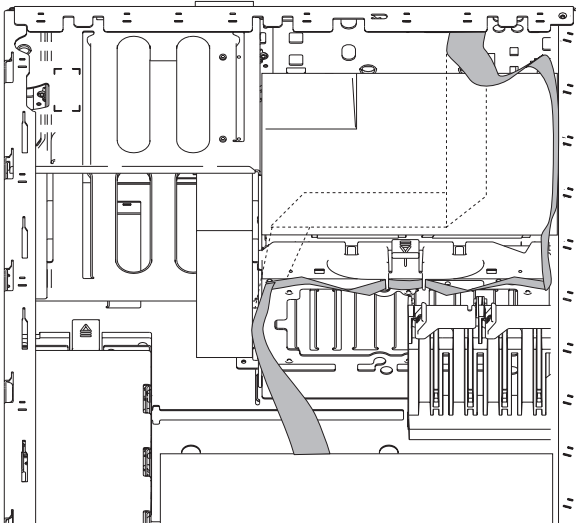


Figure 12. Routing the LED panel cable

Note: Make sure that you route the cable around any location where you removed a fan assembly. Cables can be routed on top of a server blower as long as you do not obstruct vents.

18. If you disassembled the LED panel assembly in step 15 on page 8, reassemble as follows:
- Push the LED cable connector through the opening in the LED panel bracket.
 - Connect the LED cable to the LED panel.
 - Reassemble the LED panel and bracket with the two screws that you removed earlier.
19. Place the notched end of the LED panel bracket into the opening **B**, aligning the LEDs so that they show through the holes in the server front.

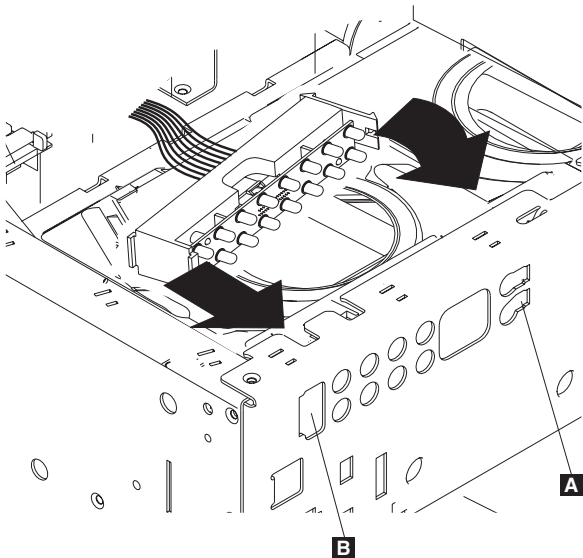


Figure 13. Installing the LED panel in the new location

20. Press the other end of the bracket through the other opening **A** until the LED panel snaps into place.

21. If you removed the fan assemblies from your server, reinstall them now.
22. Reinstall the hard drives that you removed earlier. Make sure that you install the hard drive with SCSI ID 0 in the left-most position, with the remaining drives in sequential order from left to right.
23. Reposition the CD-ROM drive and any other drives or filler panels in the non-hot-swap drive bays for rack operation, by removing and rotating them as follows:

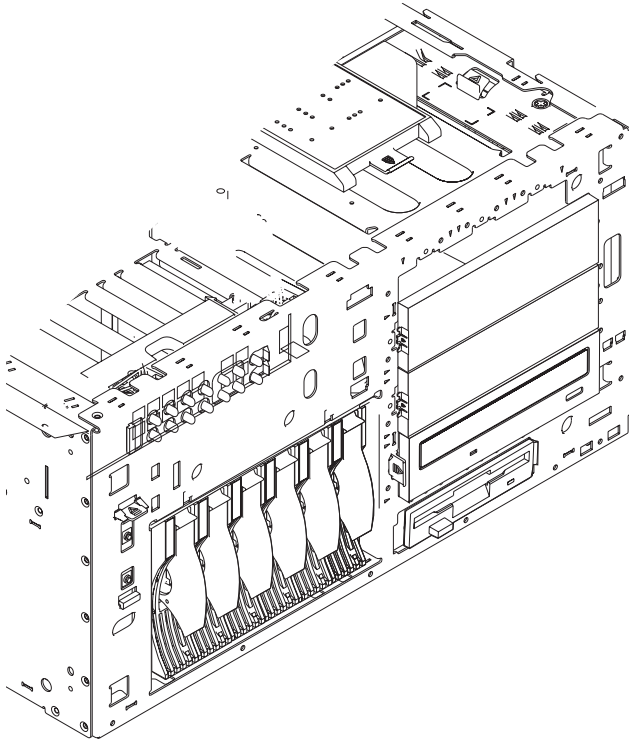


Figure 14. Repositioning the non-hot-swap drives

- a. Unlatch the side releases for each drive or filler panel; then, pull the drives or filler panel out of the server.
- b. Reposition the drives so that they are top-side up and horizontal; then, insert the drives into the server.
- c. Insert filler panels into any unused bays.

24. Install the left and right release-latch-bracket assemblies on the server as shown below:

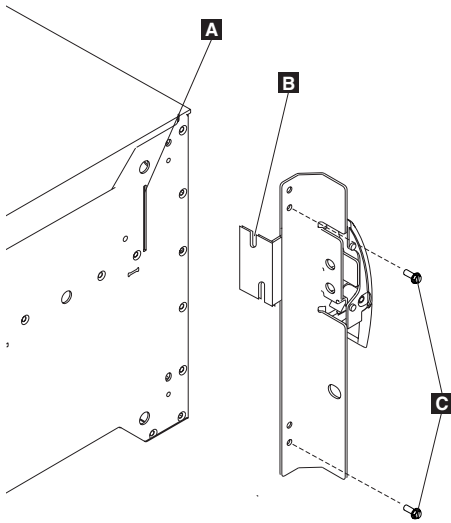


Figure 15. Installing the release-latch-bracket assemblies

a. Insert the bracket tab **B** into the slot on the side of the server **A** until the upper notch on the bracket tab aligns with the side of the server.

Note: The left bracket is marked with an **L**.

b. Push the bracket up until the holes in the bracket align with the holes in the side of the server; then, secure the bracket with two M3.5 screws.

c. Use the above steps to install the right-side release-latch-bracket assembly.

25. To install the new bezel that comes with this kit, align the tabs on the back of the bezel with the tab openings on the front of the server; then, swing the bezel toward the server and press until it snaps into place.

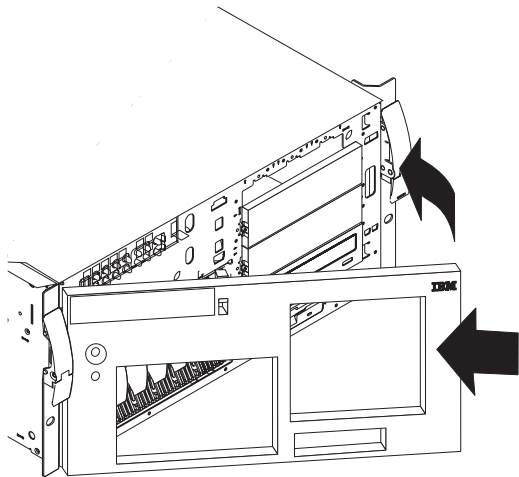


Figure 16. Installing the new bezel

26. Install the new top cover as shown below:

- a. Attach the appropriate service label for your server on the inside surface of the top cover.
- b. Align the top cover with the top of the server, about 25 mm (1 in.) from the front of the server.

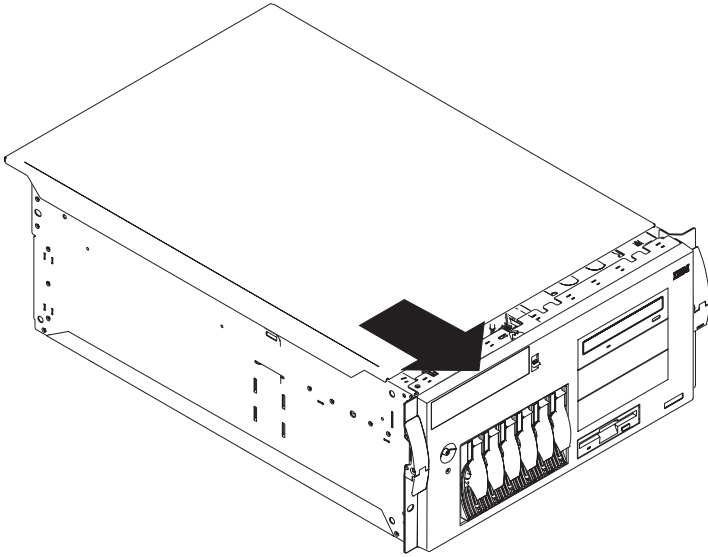


Figure 17. Installing the top cover

- c. Hold the top cover against the server and slide it toward the front of the server until the cover snaps into place.

Note: Ensure that the tabs on the back of the cover fit into the slots on the back of the server. Be sure that the front edge of the server is flat against the server.

27. Attach the rack-support wheels **A** to the sides of the server, near the rear of the server.

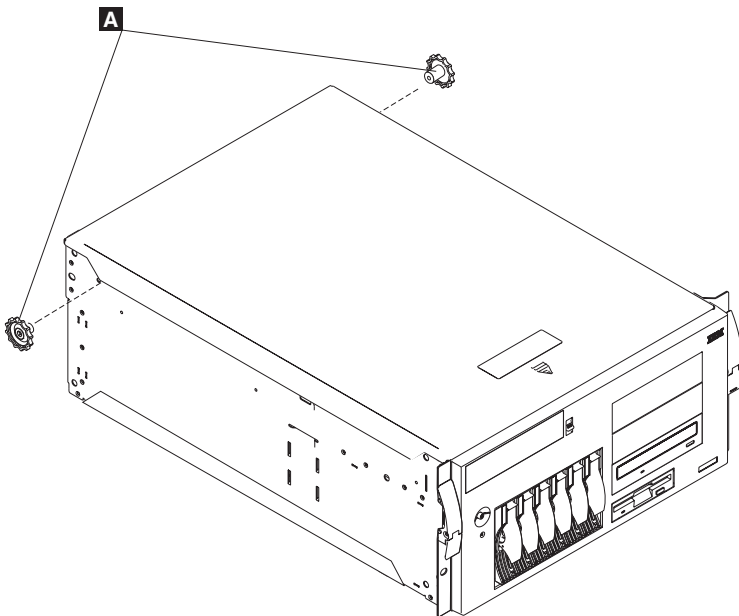


Figure 18. Installing the rack-support wheels

Proceed with “Installing the server in a rack cabinet” on page 14 to install your server in a rack cabinet.

Installing the server in a rack cabinet

Important:

Review the documentation that comes with your rack enclosure for safety and cabling considerations.

When installing your server in a rack, the following considerations should be made:

- The server should be installed in a maximum 35 degree C environment
- To ensure proper air flow, it is recommended that the air vents not be blocked, usually 15 cm (6 in.) of air space is sufficient
- To ensure stability, precautions should be taken to prevent uneven loading of the rack; loading of the rack should begin at the bottom
- When multiple components are installed in a rack, precautions should be taken to prevent overloading of power outlets
- The server should always be connected to a properly grounded outlet

Use the following basic steps to install your server in a rack cabinet:

1. Refer to your server and rack documentation for detailed installation information.

Note: Removing rack doors and side panels makes it easier to install the server.

2. Use the rack installation template that comes with the 5Ux24D Tower-to-Rack Kit to mark the holes on your rack cabinet for cage nut or clip nut, according to your rack installation.

Note: The rack installation template contains full instructions to complete server installation. Steps are repeated here in case your template is not available. See Figure 19 on page 15 for cage nut or clip nut locations on the front (release latch retaining screws **C** and slide rails **D**) and rear (cable-management arm hinge bracket **B** and slide rails **A**) of your rack.

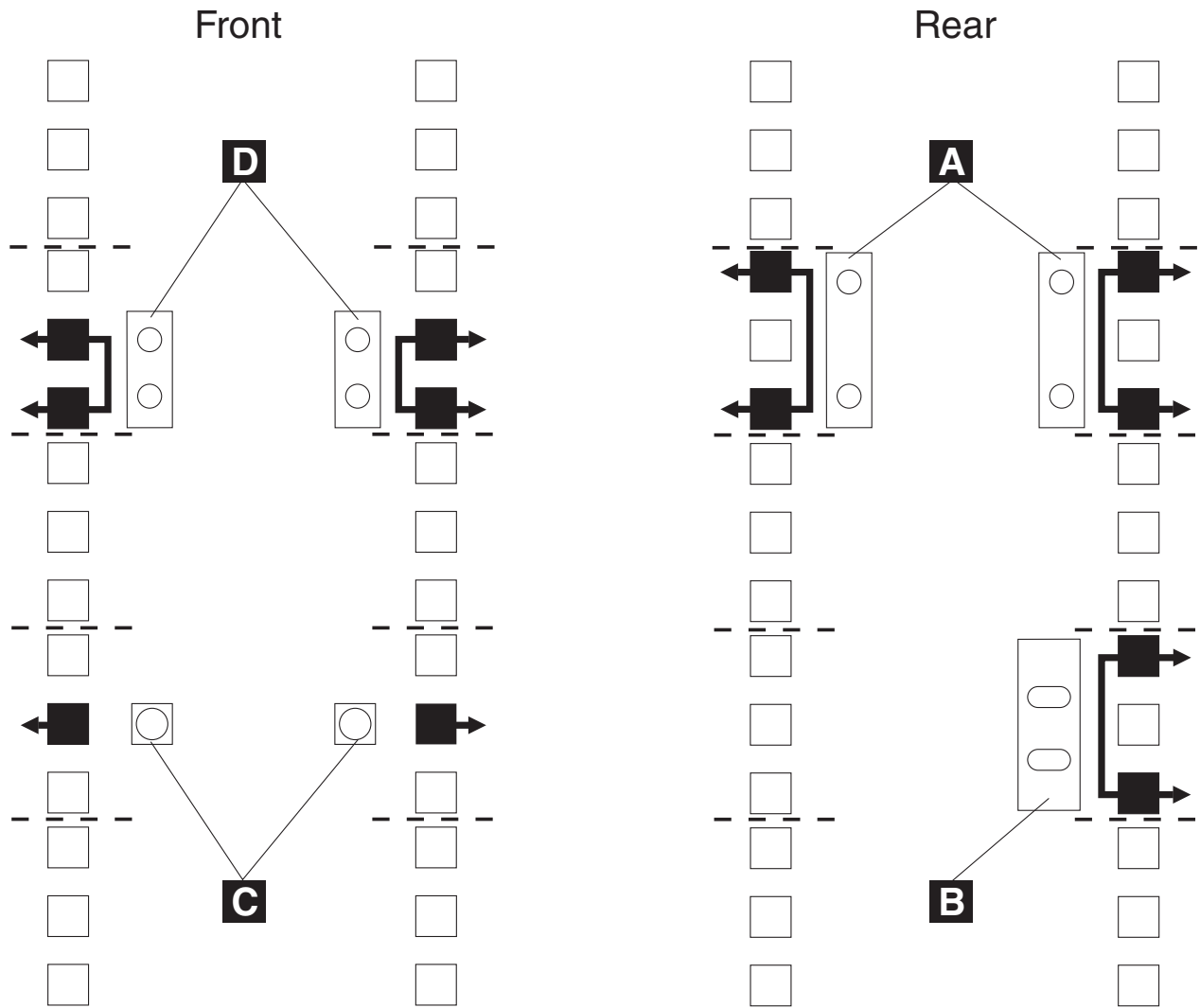


Figure 19. Locating cage nuts or clip nuts on the front and rear of a rack cabinet

3. Use the pins **A** on the slide rail to align the slide rail to the rack; then, use four M6 screws (two in front and two in the rear) to secure the rail to the rack.

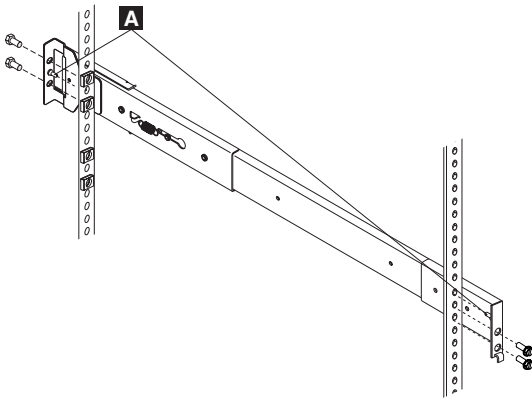


Figure 20. Installing the slide rails

Note: Install the left and right slide rails before continuing with the installation.

4. Install the cable-management arm assembly:

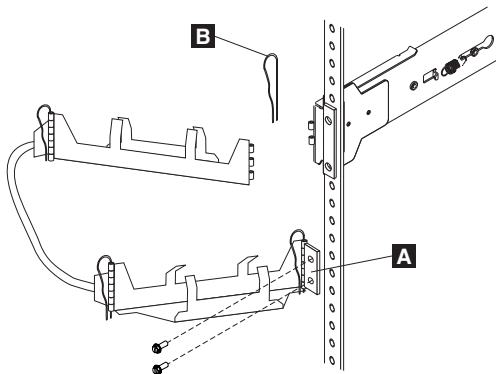


Figure 21. Assembling and installing the cable-management arms

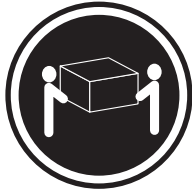
- a. Secure the hinge bracket **A** to the right rear of the rack, below the slide rail, with two M6 screws.
- b. Connect the other end of the cable-management arm assembly to the right slide rail with one hinge pin **B**.

Note: You must position the cable-management arms as shown in figure Figure 21.

5. Extend both slide rails all the way out of the rack.

Note: When the slide rails are fully extended, safety latches lock the rails in place. To release the safety latches, press them in toward the server.

4



≥18 kg (37 lbs)



≥32 kg (70.5 lbs)



≥55 kg (121.2 lbs)

CAUTION:

Use safe practices when lifting.

6. Lift the server above the slide rails; then, rest the rack-support wheels **A** on the rear of the slide rails.

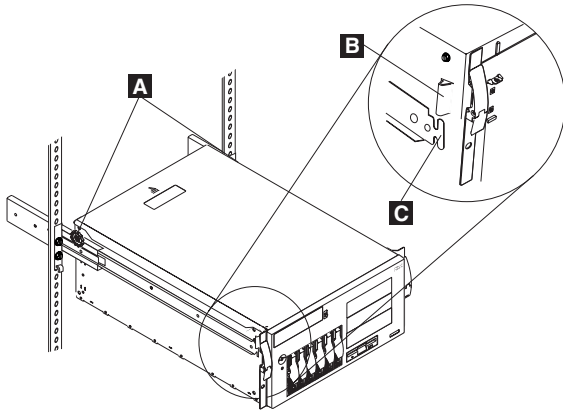


Figure 22. Placing the server on the slide rails

Carefully lower the front of the server onto the slide rails.

Note: Be sure that the bracket notches **B** on the front of the server fit securely on the tabs **C** located on the front of the slide rails.

7. Use four M4 screws per side to secure the server to the slide rails; then, remove the rack-support wheels and store them for potential future use.

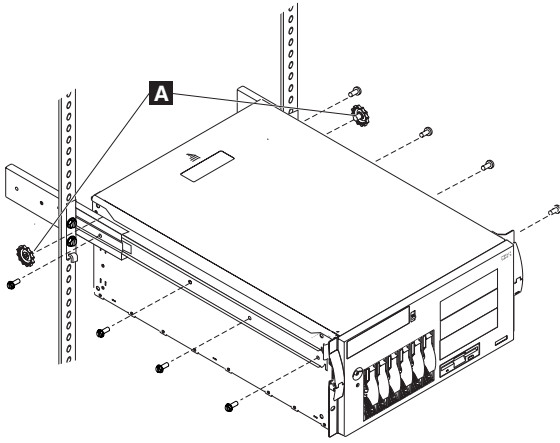


Figure 23. Securing the server to the rails

8. Connect all server and device cables; then, route them along the cable-management arm assembly and secure them to the arm with the cable straps **A** that come with the 5Ux24D Tower-to-Rack Kit.

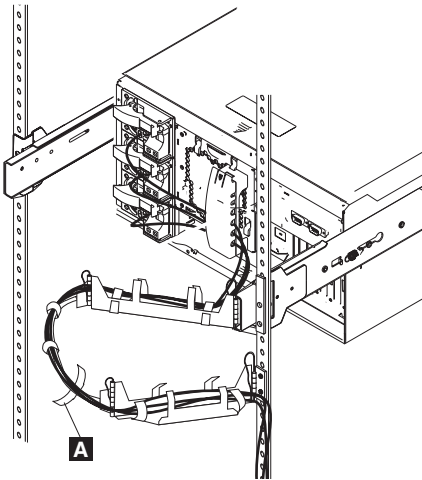


Figure 24. Routing server cables

- Slide the server fully into the rack until the left and right release latches **A** engage on the slide rails.

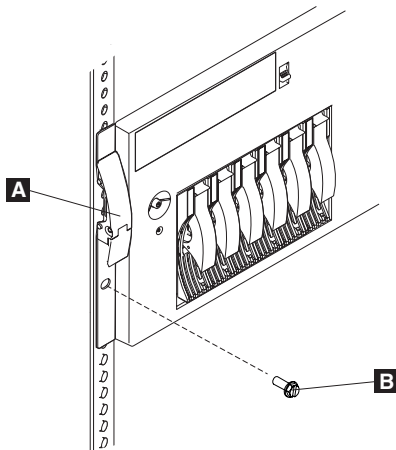


Figure 25. Securing the server inside the rack

- Install the M6 server retaining screws **B** to provide added stability to your server, especially if you are moving the rack or the rack is located in a vibration-prone area.
- For Netfinity 5600 model servers see “Using the Netfinity 5600 setup utility diskette” on page 20; then, return here to complete the installation.
- Use the server configuration program to reconfigure the server for the new rack orientation as shown below:
 - Press the power control button to turn on the server and watch the display for the Press F1 for Configuration/Setup and Press F2 for Diagnostics messages to appear; then, press **F1**.
 - Select **System Information**; then, select **Product Data**.
 - Change the machine type and model from a tower model to a rack model by changing the sixth position character of the machine type and model number to **R**.
 - Press **ESC** to return to the main configuration utility menu.
 - Select **Save Settings**; then, select **Exit Setup**.

The 5Ux24D Tower-to-Rack Kit installation is complete.

Using the Netfinity 5600 setup utility diskette

If you are installing the 5Ux24D Tower-to-Rack Kit on a Netfinity 5600 server, insert the *IBM Netfinity 5600 Hot-Plug SCSI Setup Utility* disk in drive a: and restart the system.

Important

1. Only run this utility if you are installing this kit on a Netfinity 5600 server.
2. Failure to run this utility if you are installing this kit on a Netfinity 5600 server will result in the SCSI drive order being reported incorrectly. Failure to run this utility can also cause a loss of data.
3. Complete all other steps in this installation procedure before running the utility.

The utility on the diskette starts automatically and updates the drive order of the SCSI IDs. A progress indicator displays during both stages of the utility (up to three minutes), followed by a message that indicates successful or unsuccessful completion of the utility.

If the utility did not complete successfully, restart the server to retry the utility. If the utility repeatedly fails to complete successfully, contact your authorized service representative.

If the utility completed successfully, remove the diskette and turn off the server; then, disconnect all power cords and wait 60 seconds before you reconnect all power cords, and restart the server.

Getting help, service, and information

If you need help, service, technical assistance, or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you.

With the original purchase of an IBM hardware product, you have access to extensive support coverage. During the IBM hardware product warranty period, you may call the IBM Personal Computer HelpCenter (1-800-772-2227 in the U.S.) for hardware product assistance covered under the terms of the IBM Statement of Limited Warranty.

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 Engineering Changes (ECs) available that apply to your hardware.

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

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

On the World Wide Web, the IBM Personal Computing Web site has up-to-date information about IBM Personal Computer products and support.

Some helpful addresses are:

http://www.ibm.com	Main IBM home page
http://www.ibm.com/pc	IBM Personal Computing
http://www.ibm.com/pc/support	IBM Personal Computing Support
http://www.ibm.com/pc/us/accessories	Options by IBM (U.S.)
http://www.ibm.com/pc/us/netfinity	IBM Netfinity Servers (U.S.)
http://www.ibm.com/pc/techconnect	IBM TechConnect

You can select a country-specific Web site from these pages.

If you select 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. You will have the information you need, all in one place. In addition, you can choose to receive e-mail notifications whenever new information becomes available about your registered products. You also can access online support forums, which are community sites monitored by IBM support staff.

Product warranties and notices

This section contains important product warranty and notice information about your product.

Warranty Statements

The warranty statements consist of two parts: Part 1 and Part 2. Part 1 varies by country. Part 2 is the same for both statements. Be sure to read both the Part 1 that applies to your country and Part 2.

- **United States, Puerto Rico, and Canada (Z125-4753-05 11/97)**
(Part 1 - General Terms on page 22)
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)**
(Part 1 - General Terms on page 24)
- **Worldwide Country-Unique Terms**
(Part 2 - Country-Unique Terms on page 26)

IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (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 may 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 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.

Machine - IBM Netfinity 5Ux24D Tower-to-Rack Kit

Warranty Period* - Three Years

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

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. 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.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

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. The replacement may not be new, but will be in good working order.

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.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND**.

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 the Machine, contact your reseller or IBM. In the United States, call IBM at 1-800-772-2227. In Canada, call IBM at 1-800-565-3344. (In Toronto, call 416-383-3344.) You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, 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. IBM may repair the failing Machine or exchange it at its discretion.

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.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. 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.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

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), 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 greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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 (INCLUDING LOST PROFITS OR 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.

IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 - General Terms)

This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1. The warranties provided by IBM in this Statement of 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 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.

Machine - IBM Netfinity 5Ux24D Tower-to-Rack Kit

Warranty Period* - Three Years

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

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. 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.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

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. The replacement may not be new, but will be in good working order.

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.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

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 the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, 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. IBM may repair the failing Machine or exchange it at its discretion.

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.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. 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 fulfil 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.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

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), 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 greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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 (INCLUDING LOST PROFITS OR 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.

Part 2 - Worldwide Country-Unique Terms

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 legislation and are only limited to the extent permitted by the applicable legislation.

Extent of Warranty: The following replaces the first and second sentences of this Section:

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

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, 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.

PEOPLE'S REPUBLIC OF CHINA: Governing Law: The following is added to this Statement:

The laws of the State of New York govern this Statement.

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 Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

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.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

The following terms apply to all EMEA countries.

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

Warranty Service

If you purchased 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 purchased 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.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

The following terms apply to the country specified:

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

2. 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.

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).

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 are 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.

Production Status: The following paragraph replaces this Section:

Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

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

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

In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

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

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

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 the greater of Irish Pounds 75,000 or 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: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance 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 second 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.

TURKIYE: Production Status: The following replaces this Section:

IBM fulfils customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

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 the greater of Pounds Sterling 150,000 or 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 will be limited to damages.

NORTH AMERICA

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

To obtain warranty service from IBM, call **1-800-565-3344**. In Toronto, call **416-383-3344**.

UNITED STATES OF AMERICA: Warranty Service: The following is added to this Section:

To obtain warranty service from IBM, call **1-800-772-2227**.

Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Subject to IBM's valid intellectual property or other legally protectable rights, any functionally equivalent product, program, or service may be used instead of the IBM product, program, or service. The evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the responsibility of the user.

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