

RDX USB Drive



User's Guide

RDX USB Drive



User's Guide

Note: Before using this information and the product it supports, read the general information in Appendix C, "Notices," on page 23, the *Safety Information and Environmental Notices and User Guide* documents on the IBM Documentation CD, and the *IBM Safety, Warranty, Environmental, and Electronic Emission Notices* document that comes with the product.

Fourth Edition (January 2013)

© Copyright IBM Corporation 2013.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Safety v

Chapter 1. Introduction 1

The IBM Documentation CD	1
Hardware and software requirements	1
Using the Documentation Browser	1
Notices and statements in this documentation	2
Terms used in this documentation	2
Components	3
Drive dock	3
Cartridge	4
Utility software	4
Front panel	5

Chapter 2. Installing the RDX drive 7

Installation guidelines	7
Handling static-sensitive devices.	7
Parts inventory	8
Installing an internal RDX drive dock	8
Installing the external RDX drive dock.	9
Installing the RDX utility software.	10

Chapter 3. Using the RDX drive 11

Ordering additional cartridges	11
Option parts listing.	11
Working with cartridges	11
Handling a cartridge	12
Inserting a cartridge	12
Ejecting a cartridge.	13
Using the RDX utility software.	14
Solving problems	14
Replacing the RDX drive	16
Tier 1 customer replaceable unit (CRU)	16
Replacing the RDX drive	16

Appendix A. Specifications 17

Physical specifications	17
Power requirements	17
Environmental specifications	17
Performance specifications	18

Appendix B. Getting help and technical assistance 19

Before you call	19
Using the documentation.	20
Getting help and information from the World Wide Web	20
How to send Dynamic System Analysis data to IBM	20
Creating a personalized support web page	20
Software service and support	21
Hardware service and support	21
IBM Taiwan product service.	21

Appendix C. Notices 23

Trademarks	23
Important notes	24
Particulate contamination.	25
Documentation format.	26
Telecommunication regulatory statement	26
Electronic emission notices	26
Federal Communications Commission (FCC) statement	26
Industry Canada Class A emission compliance statement	27
Avis de conformité à la réglementation d'Industrie Canada	27
Australia and New Zealand Class A statement	27
European Union EMC Directive conformance statement	27
Germany Class A statement	27
VCCI Class A statement	28
Japan Electronics and Information Technology Industries Association (JEITA) statement.	28
Korea Communications Commission (KCC) statement	29
Russia Electromagnetic Interference (EMI) Class A statement	29
People's Republic of China Class A electronic emission statement	29
Taiwan Class A compliance statement	29

Index 31

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安裝本產品之前，請仔細閱讀 **Safety Information** (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si 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.

Bu ürünü kurmadan önce güvenlik bilgilerini okuyun.

بىلىش
دېتاللىرىنى
ئۆزگەرتىش
يېقىن
يېقىن
ئۆزگەرتىش
يېقىن
يېقىن
يېقىن
يېقىن

ཐོན་རྒྱུ་འདི་བདེ་སྐྱོད་མ་བྱས་ཤོང་། རྫོང་གི་ཡིད་གཟབ་
བྱ་འདྲ་མིན་ཡོད་པའི་འོད་སྟེར་བལྟ་དགོས།

مەزكۇر مەھسۇلاتنى ئورنىتىشتىن بۇرۇن بىخەتەرلىك ئۇچۇرلىرىنى ئوقۇپ چىقىڭ.

Youq mwngz yungh canjbinj neix gaxgonq, itdingh aeu doeg aen
canjbinj soengq cungj vahgangj ancien siusik.

Statement 1:



DANGER

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

To avoid a shock hazard:

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

To Connect:	To Disconnect:
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

Statement 8:



CAUTION:

Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

Chapter 1. Introduction

The RDX USB drive is a removable, ruggedized, hard disk drive for IBM® System x™ and BladeCenter. It features backup application compatibility, high-speed transfer rate for fast backups, portable cartridges, and a high level of data reliability. The storage system is available as an internal USB device (see Figure 1 on page 3) or an external USB device (see Figure 2 on page 3). Read this entire document and the software documentation that comes with the drive before you install or use the drive.

The RDX drive comes with a limited warranty. For information about the warranty and getting service and assistance, see the *Warranty and Support Information* document that came with your drive.

Contact your IBM marketing representative or authorized reseller if an item is missing or damaged. Be sure to retain your proof of purchase. It might be required for you to receive warranty service.

The IBM Documentation CD

The IBM *Documentation CD* contains documentation for the RDX drive in Portable Document Format (PDF) and includes the IBM Documentation Browser to help you find information quickly.

Hardware and software requirements

The IBM *Documentation CD* requires the following minimum hardware and software:

- Microsoft Windows XP, Windows 2000, or Red Hat Linux
- 100 MHz microprocessor
- 32 MB of RAM
- Adobe Acrobat Reader 3.0 (or later) or xpdf, which comes with Linux operating systems

Using the Documentation Browser

Use the Documentation Browser to browse the contents of the CD, read brief descriptions of the documents, and view documents, using Adobe Acrobat Reader or xpdf. The Documentation Browser automatically detects the regional settings in your server and displays the documents in the language for that region (if available). If a document is not available in the language for that region, the English-language version is displayed.

Use one of the following procedures to start the Documentation Browser:

- If Autostart is enabled, insert the CD into the CD drive. The Documentation Browser starts automatically.
- If Autostart is disabled or is not enabled for all users, use one of the following procedures:
 - If you are using a Windows operating system, insert the CD into the CD drive and click **Start --> Run**. In the **Open** field, type
`e:\win32.bat`

where *e* is the drive letter of the CD drive, and click **OK**.

- If you are using Red Hat Linux, insert the CD into the CD drive; then, run the following command from the `/mnt/cdrom` directory:

```
sh runlinux.sh
```

Select **RDX** from the **Product** menu. The **Available Topics** list displays all the documents for the RDX drive. Some documents might be in folders. A plus sign (+) indicates each folder or document that has additional documents under it. Click the plus sign to display the additional documents.

When you select a document, a description of the document is displayed under **Topic Description**. To select more than one document, press and hold the Ctrl key while you select the documents. Click **View Book** to view the selected document or documents in Acrobat Reader or xpdf. If you selected more than one document, all the selected documents are opened in Acrobat Reader or xpdf.

To search all the documents, type a word or word string in the **Search** field and click **Search**. The documents in which the word or word string appears are listed in order of the most occurrences. Click a document to view it, and press Ctrl+F to use the Acrobat search function, or press Alt+F to use the xpdf search function within the document.

Click **Help** for detailed information about using the Documentation Browser.

Notices and statements in this documentation

The caution and danger statements in this document are also in the multilingual *Safety Information* document, which is on the IBM *Documentation* CD. Each statement is numbered for reference to the corresponding statement in your language in the *Safety Information* document.

The following notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage might occur.
- **Danger:** These statements indicate a situation that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

Terms used in this documentation

The following terms are referred to as the following throughout this document:

- **RDX drive:** RDX drive dock with the cartridge inserted.
- **RDX drive dock:** RDX drive dock without the cartridge inserted.
- **RDX cartridge:** Hard disk drive which is used with RDX drive dock.

Components

This section provides a description of the following RDX components:

- Drive dock (either internal or external)
- Cartridge
- Utility software

Drive dock

The internal or external RDX drive dock serves as a cartridge housing.

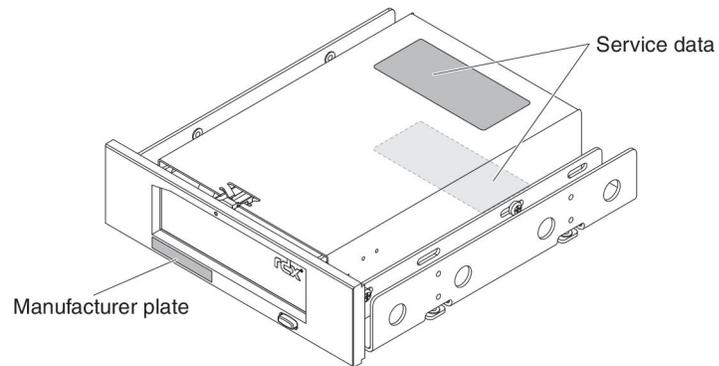


Figure 1. Internal RDX drive dock

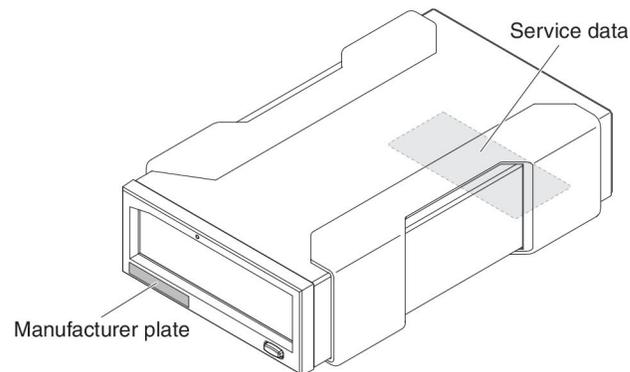


Figure 2. External RDX drive dock

Cartridge

The cartridge is a removable hard disk drive.

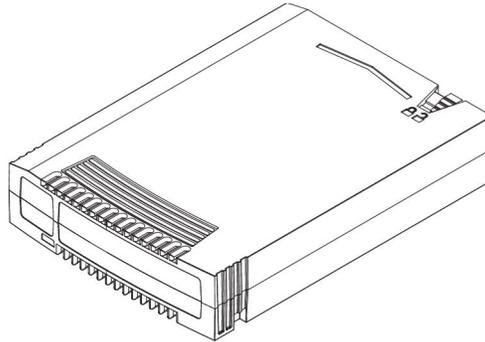


Figure 3. Cartridge

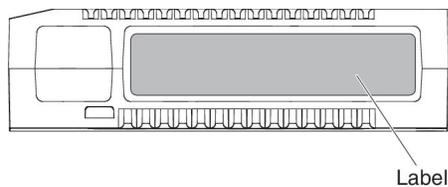


Figure 4. Front of the Cartridge

Note: Place the label only onto the gray area as shown in Figure 4 of the RDX cartridge. Labelling the RDX cartridge on any other area may cause failures during cartridge use and may also damage the RDX drive dock.

The cartridge has the following features:

- Is ruggedized to withstand a drop from up to 1.0 meters (39.4 in.) without damage
- Can be write-protected
- Has 320 GB, 500 GB, 750 GB, 1 TB, or 1.5 TB of native data capacity, depending on the option that you purchased

Utility software

The RDX drive is compatible with Linux and Windows file systems. It can act as a standard drive. For detailed information about the RDX utility software, see the help information that is a part of the software application.

Note: Most backup applications that work with removable-media disk devices work with the RDX drive. However, backup applications that create files larger than 4 GB are not compatible with the FAT32 file system.

Front panel

The front panel of the RDX drive has a combined power-indicator LED and eject button, and a manual-ejection hole. The RDX cartridge has a cartridge-indicator LED.

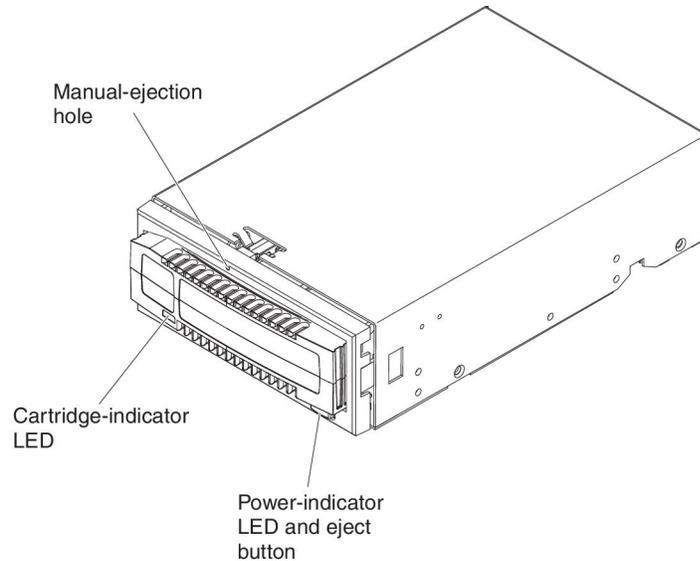


Figure 5. Front panel components

The eject button is illuminated by a power-indicator LED. It shows the status of the drive. Table 1 describes the meaning of the status of the power-indicator LED.

Note: In order to successfully eject the RDX cartridge from the drive bay, the **RDX utility** software must be installed. If the **RDX utility** software is not installed, the RDX cartridge will not be ejected and the power-indicator LED will remain steady green.

Table 1. Reading the power-indicator LED

LED status	Meaning	RDX drive status
Off	No power	The drive does not have power.
Steady green	Ready	The power is on, and the drive is working.
Flashing green	Ejecting	The cartridge is ejecting.
Steady amber	Fault	The drive has detected a fault condition. For more information, use the RDX utility software to run a diagnostic test (see the documentation that comes with the software).
Flashing amber	Prevent	The user pressed the eject button while the cartridge is in the process of reading, writing, or seeking. The cartridge ejects and the indicator returns to a steady green after the process completed.

The cartridge-indicator LED displays the status of the cartridge. Table 2 on page 6 describes the meaning of the status of the cartridge-indicator LED.

Table 2. Reading the cartridge-indicator LED

LED status	Meaning	RDX cartridge status
Off	Not ready	The cartridge was not inserted correctly, or the drive has no power.
Steady green	Ready	The cartridge is ready.
Flashing green	Activity	The cartridge is in the process of reading, writing, or seeking.
Flashing amber	Fault	The drive has detected a cartridge-fault condition. For more information, run a diagnostic application (see the software documentation that comes with the drive).

Chapter 2. Installing the RDX drive

This chapter provides installation instructions for the internal RDX drive (see “Installing an internal RDX drive dock” on page 8) and the external RDX drive (see “Installing the external RDX drive dock” on page 9). Depending on the server, you might need a standard or Philips screwdriver to remove the server cover and install the drive in your server.

Installation guidelines

Before you remove or replace a device, read the following safety information:

- Read the safety information that begins on page v and “Handling static-sensitive devices.” This information will help you work safely.

Attention: Take standard electrostatic discharge precautions when you work inside the server.

- Observe good housekeeping in the area where you are working. Place removed covers and other parts in a safe place.
- Make sure that you have an adequate number of properly grounded electrical outlets for the server and all attached devices.
- Back up all important data before you make changes to disk drives.
- For rack mount applications, RDX drive should not be used on the hot aisle side of the rack due to the server preheating.

Handling static-sensitive devices

Attention: Static electricity can damage electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.

To reduce the possibility of damage from electrostatic discharge, observe the following precautions:

- Limit your movement. Movement can cause static electricity to build up around you.
- The use of a grounding system is recommended. For example, wear an electrostatic-discharge wrist strap, if one is available.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed circuitry.
- Do not leave the device where others can handle and damage it.
- While the device is still in its static-protective package, touch it to an unpainted metal surface for at least 2 seconds. This drains static electricity from the package and from your body.
- Remove the device from its package and install it immediately without setting down the device. If it is necessary to set down the device, put it back into its static-protective package. Do not place the device on a metal surface.
- Take additional care when you handle devices during cold weather. Heating reduces indoor humidity and increases static electricity.

Parts inventory

Before you install the RDX drive, make sure that you received the following parts:

- Internal RDX drive:
 - Internal drive dock
 - Media cartridge
 - 4 internal USB cables (you must select the applicable cable for your server)
 - 4 mounting screws
 - IBM *Documentation CD*
 - RDX utility CD
- External RDX drive:
 - External drive dock
 - Media cartridge
 - External USB cable
 - Power adaptor
 - IBM *Documentation CD*
 - RDX utility CD

Installing an internal RDX drive dock

Use the following instructions to install an internal RDX drive dock. The drive dock is ready to install in a standard 5.25-inch half-high bay.

Note: Keep the packaging that comes with the RDX drive in case you have to return it for service or warranty replacement.

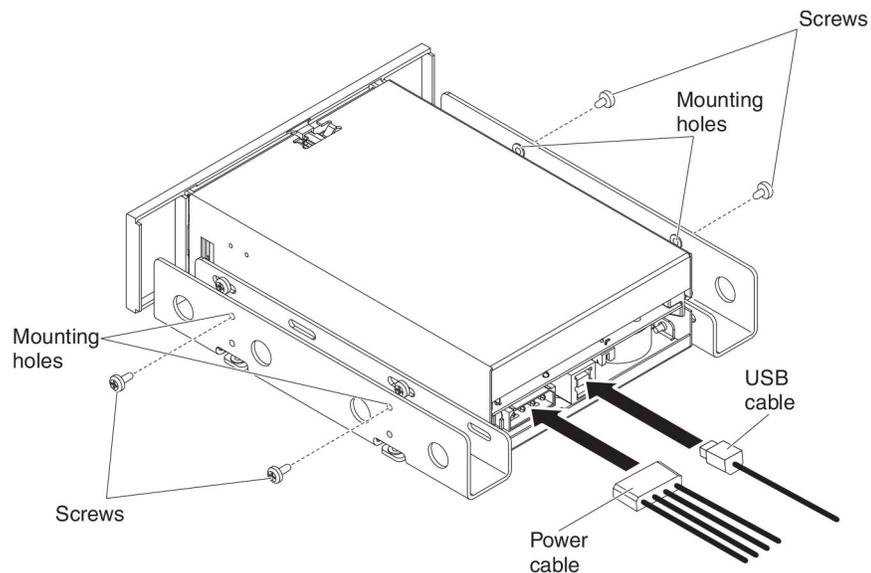


Figure 6. Finding the connectors on an internal RDX drive dock

To install the internal RDX drive dock, complete the following steps:

1. Unpack the drive.
2. Turn off the server.
3. Open the server cover, using a screwdriver if necessary.

4. Mount the drive dock. Slide the drive into an unused drive bay until the bezel is level with the front of the server. Secure the drive dock, using the mounting screws provided.
5. Connect the power cable to the power connector.
6. Find the USB cable with a connector that matches the USB connector on your server system board (see Table 5 on page 16 for more information).
7. Connect the USB cable to the USB connector on the drive dock.
8. Connect the other end of the USB cable to the USB connector on the system board.
9. Check all cables in your server. Make sure that they are routed so that they will not become crimped, and make sure that no cables have become loose during the installation.
10. Install the server cover and turn on the server.
11. Run the applicable **RDX utility** software for the operating system on your server.

Notes:

- a. If you install a new operating system on a server with an RDX drive attached, make sure that the cartridge is removed. This prevents the operating system from mistaking the RDX cartridge for the server hard disk drive.
- b. Install the **RDX utility** software before using the RDX drive. If the utility is not installed, the cartridge may not be ejected.

Installing the external RDX drive dock

Use the following instructions to install the external RDX drive dock.

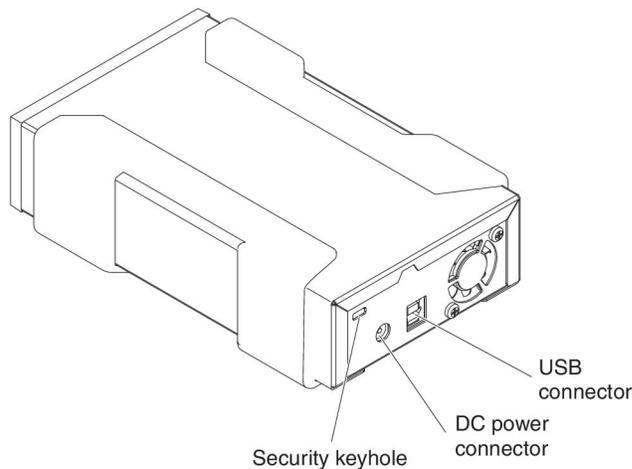


Figure 7. Finding the connectors on an external RDX drive dock

To install the external RDX drive dock, complete the following steps:

1. Unpack the drive. Select a convenient location for the drive dock that is flat, stable, level, and near the host server. The drive can be oriented either horizontally or vertically.
2. Connect a USB cable connector to the USB connector on the back of the drive dock.
3. Connect the other USB cable connector to a USB connector on the server.

4. Connect the DC supply from the power supply to the power connector on the drive dock and connect the power supply to an outlet.
5. Run the applicable **RDX utility** software for the operating system on your server. See the software documentation that comes with the drive for more information.

Notes:

- a. If you install a new operating system on a server with an RDX drive attached, make sure that the cartridge is removed. This prevents the operating system from mistaking the RDX cartridge for the server hard disk drive.
- b. Install the **RDX utility** software before using the RDX drive.

Note: If the RDX utility is not installed, the cartridge may fail to be ejected.

Installing the RDX utility software

To install the **RDX utility** application software on a server that is running a Windows or Linux operating system, see the software documentation that comes with the drive.

Notes:

1. Installation of the utility software is required for you to use the RDX drive with a Windows operating system.
2. Install the **RDX utility** software before using the RDX drive.

Note: If the RDX utility is not installed, the cartridge may fail to be ejected.

Chapter 3. Using the RDX drive

This chapter provides information about using the RDX drive. For information on using the utility software, see the software documentation that comes with your drive.

Ordering additional cartridges

The cartridges are not covered by the RDX warranty, and are considered consumable media. Table 3 lists the option components.

To order additional cartridges, contact your IBM marketing representative or authorized reseller, go to <http://www.ibm.com/systems/storage/tape/entry/x.html>, or complete the following steps.

Note: Changes are made periodically to the IBM website. The actual procedure might vary slightly from what is described in this document.

1. Go to <http://www.ibm.com/systems/storage/tape/>.
2. From the **What we offer** menu, select **Entry tape systems**.
3. From the **Products** menu, select **System x**.
4. From the **System x** menu, select **IBM RDX**; then, follow the instructions to order the part from the retail store.

If you need help with your order, call 1-888-IBM-MEDIA (1-888-426-63348), or contact your local IBM representative for assistance.

Option parts listing

Table 3. Option parts

Description	Option part number
RDX 320 GB cartridge	46C5367
RDX 500 GB cartridge	46C5368
RDX 750 GB cartridge	81Y3645
RDX 1 TB cartridge	81Y3647
RDX 1.5 TB cartridge	00D8935

Working with cartridges

This section provides information about working with cartridges.

Handling a cartridge

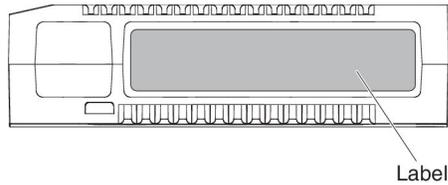


Figure 8. Cartridge

Follow these guidelines carefully to prevent damage to an RDX cartridge:

- Store cartridges in their protective cases when you are not using them.
- Do not stack cartridges.
- Do not allow cartridges to get wet.
- Do not expose cartridges to excessive dust and airborne particles.
- Do not open cartridges.
- Keep cartridges away from direct sunlight, heat sources, extreme temperatures, and rapid changes in temperature.
- Never force a cartridge into a drive dock. Before you insert a cartridge, check the orientation and make sure that the alignment is correct, using the keyed corner as a guide.

Inserting a cartridge

Note: The data cartridge cannot be inserted upside down or backwards.

To insert a cartridge into the drive dock, place the cartridge into the drive dock opening through the protective door and slowly push it until it seats firmly in the drive dock. The cartridge makes a clicking sound when it is seated. The LED on the drive flashes while the operating system accesses the drive.

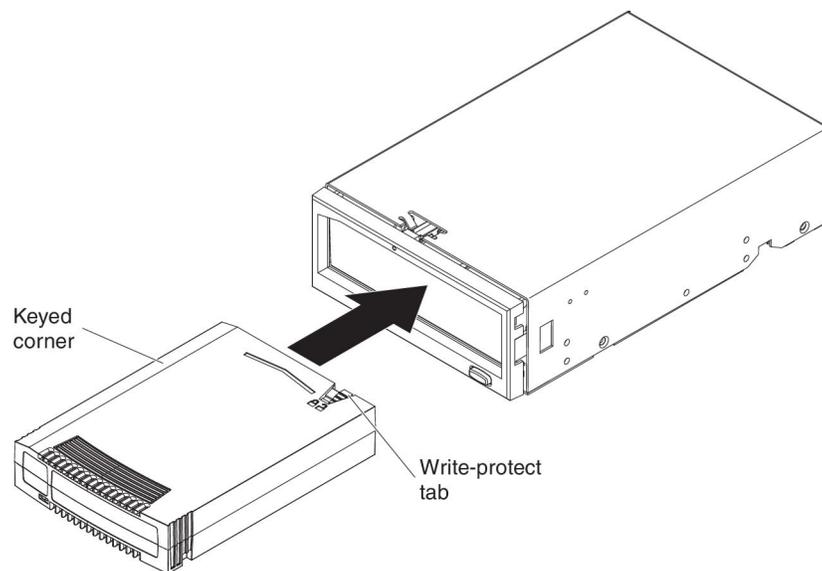


Figure 9. Inserting a cartridge

Ejecting a cartridge

You can use any of the following methods to eject a cartridge:

- When using a third party backup application, you may have to eject the cartridge through the backup application. A number of backup applications lock the cartridge and keep it locked even after a backup or restore task has been completed. For further details on how to eject the RDX cartridge within the application, see the backup application documentation.
- Press the eject button on the drive (see Figure 10 on page 14) for at least 0.5 second.

Note: Installation of the utility software is required for ejecting a cartridge.

- Use the RDX software application. For example, in Windows, complete the following steps:
 1. Locate the drive letter for the device in Windows Explorer.
 2. Right-click the icon and select **Eject**.
 3. After the cartridge is ejected, pull the cartridge out of the drive dock.

Note: Install the **RDX utility** software before using the RDX drive. If the utility is not installed, the cartridge may fail to be ejected.

- Use the manual-ejection hole (see Figure 10 on page 14) to eject the cartridge in case of a power loss or when the other methods of cartridge ejection fail.

CAUTION:

Only when all above-mentioned methods fail to eject the cartridge, use the manual-ejection hole to eject the cartridge.

To eject a cartridge, complete the following steps:

1. If you are using an internal RDX drive, turn off the server. If you are using an external RDX drive, disconnect the power cord.
2. Insert a straightened paper clip or similar object into the manual ejection hole until the cartridge is ejected.
3. After the cartridge is ejected, pull the cartridge out of the drive dock.
4. The server operating system does not recognize the RDX media immediately after manual ejection of an RDX cartridge. Restart the server to reset the drive.

Attention: Do not manually eject an RDX cartridge while the cartridge-indicator LED is flashing.

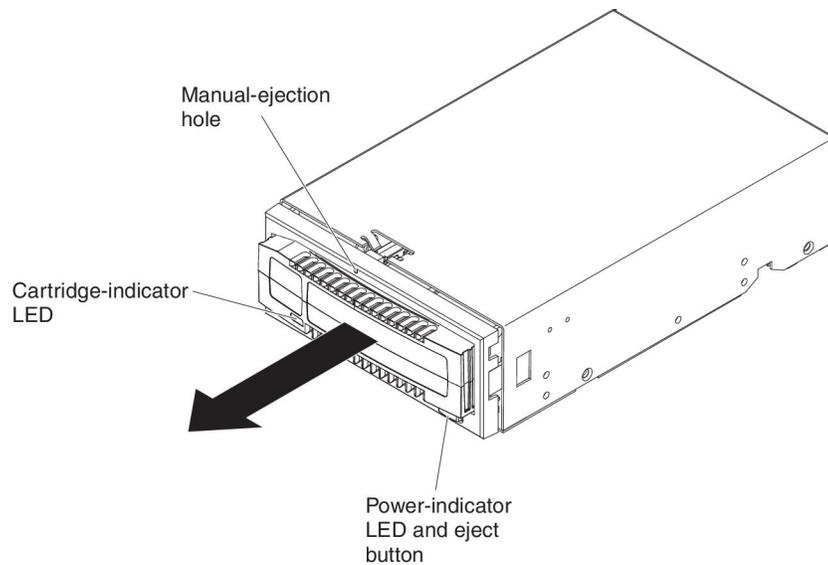


Figure 10. Ejecting a cartridge

Using the RDX utility software

The **RDX utility** software is a Windows or Linux application that you can use to diagnose problems with the drive. Use the **RDX utility** to perform the following tasks:

- Identify the RDX drive that is attached to your server.
- Retrieve device and cartridge status information.
- Test the drive dock and the cartridge.
- Upgrade the drive firmware.

See the software documentation that comes with the drive for more information about using the utility software.

Solving problems

Error conditions are indicated by entries in the Windows or Linux Application and Windows System Event log, error messages that are displayed on the screen, and the LED on the front of the RDX drive. For more information about the LED indications, see Table 1 on page 5.

Note: For Linux operating system, consult the various message files for more details.

Table 4 on page 15 lists problems that might occur with the RDX drive and potential solutions.

Table 4. Problems and solutions

Problem	Solution
The RDX drive is not working, and the power-indicator LED is flashing amber.	<p>The error was caused by one of these conditions:</p> <ul style="list-style-type: none"> • The drive dock cannot eject the cartridge because of an obstruction. • The internal electronics are damaged or malfunctioning. <p>To remove a stuck cartridge, see the instructions for manual ejection in “Ejecting a cartridge” on page 13.</p>
The RDX cartridge is not working, and the cartridge-indicator LED is flashing amber.	<p>The error was caused by one or more of these conditions:</p> <ul style="list-style-type: none"> • The cartridge is not compatible with the drive dock. • The cartridge has been damaged. • The cartridge has not been inserted completely. • The eject button has been pressed while the operating system accesses the drive. <p>Use the RDX utility software to obtain more information about the failure. For detailed information about the utility software, see the software documentation that comes with the drive.</p>
The firmware download fails with Windows Server 2003.	If you are using Windows Server 2003, either Service Pack 1 or Service Pack 2 must be installed for you to download the firmware.
The drive performance is slow.	Make sure that the drive is connected to a USB 3.0 port, instead of a USB 1.1 port. If a USB 3.0 port is not available, connect the drive to a USB 2.0 port. For best performance, connect the drive, if available, directly to a USB 3.0 root port on the server instead of an external USB hub.
The server does not complete the boot process with the external RDX drive.	<p>Some versions of BIOS do not handle large USB removable media correctly. If your server does not complete the boot process with the external RDX drive attached, complete the following steps:</p> <ol style="list-style-type: none"> 1. Make sure that you are using the latest version of BIOS for your server. 2. Disable USB boot in the BIOS and try the boot process again. 3. Eject the RDX cartridge and try the boot process again. 4. Disconnect the external RDX drive dock and try the boot process again. <p>Note: If you are using a FAT32-formatted cartridge, reformatting the cartridge to another file system might correct the problem.</p>

Additional problem-solving information is in the *Troubleshooting Tape drive issues* online document on the IBM website. To find this document, go to <http://www-304.ibm.com/systems/support/supportsite.wss/docdisplay?brandind=5000008&Indocid=MIGR-50646>, or complete the following steps.

Note: Changes are made periodically to the IBM website. The actual procedure might vary slightly from what is described in this document.

1. Go to <http://www-947.ibm.com/support/entry/portal/>.
2. In the Search within all of support & downloads text field at the bottom of the screen, type *troubleshooting tape drive issues* and press Enter.
3. In the list of search results, click the link **Troubleshooting Tape drive issues**.

Replacing the RDX drive

For more information about the terms of the warranty and getting service and assistance, see the *Warranty Information* document.

Tier 1 customer replaceable unit (CRU)

The RDX drive components are Tier 1 customer replaceable units (CRUs). Replacement of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

If you are instructed to return a component, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Table 5 lists the replaceable components.

Table 5. CRU list

Description	Tier 1 CRU part number
Internal RDX USB 3.0 drive dock	46C2346
External RDX USB 3.0 drive dock	46C2347
System x3650 or x3655 internal USB cable	46M6475
System x3400 or x3500 internal USB cable	46M6477
System x3100 or x3200 internal USB cable	81Y3643
1 M internal USB cable for all other System x servers	44E8893
External RDX power adaptor	81Y8905
3.5-inch bezel	46C5392
Mounting screws	42C3933

Replacing the RDX drive

To remove the internal RDX drive, complete the following steps:

1. Read the safety information that begins on page v and “Handling static-sensitive devices” on page 7.
2. Eject and remove the cartridge from the drive dock.
3. Make sure that the server is turned off and that the power cord is disconnected.
4. Remove the server covers, using the instructions that came with the server.
5. Disconnect the power cord from the drive dock.
6. Disconnect the USB cable from the drive dock.
7. Remove the drive dock from the bay, using the drive-installation instructions that came with your server.

Appendix A. Specifications

The section provides a summary of the internal and external RDX drive specifications:

Physical specifications

Table 6. Physical specifications

	Internal RDX drive dock	External RDX drive dock	RDX cartridge
Form Factor	5.25-inch half-height internal	External	Removable cartridge
Height	41.4 mm (1.63 in.)	51.8 mm (2.04 in.)	23.7 mm (0.93 in.)
Width	146.0 mm (5.75 in.)	109.8 mm (4.32 in.)	86.6 mm (3.41 in.)
Depth	171.9 mm (6.77 in.) including bezel	177.5 mm (7.00 in.) including bezel	119.2 mm (4.69 in.)
Weight	635 g (1.40 lb)	540 g (1.19 lb)	173 g (0.38 lb)

Power requirements

Table 7. Power specifications

Description	Internal RDX drive dock	External RDX drive dock
Voltage tolerance	5.00 V dc \pm 5%	12.00 V dc \pm 10%
Typical power consumption	4.75 W	6.6 W
Peak power consumption	8.4 W	13.0 W
AC adapter		Universal adapter 100 - 240 V ac, 50 - 60 Hz input

Environmental specifications

Table 8. Environmental specifications

	Operational	Non-operational
Temperature	10°C to 40°C (50°F to 104°F)	-40°C to 65°C (-40°F to 149°F)
Thermal gradient	10°C (50°F) per hour	20°C (36°F) per hour
Relative humidity	20% to 80% noncondensing	10% to 90% noncondensing
Maximum wet bulb temperature	29°C (84°F)	38°C (100°F)
Altitude	-17 m to 3300 m (50 ft to 10000 ft)	-15.24 m to 10668 m (-50 ft to 35000 ft)

Table 8. Environmental specifications (continued)

		Operational	Non-operational
Vibration	Internal RDX drive dock	sine vib 0.50 g peak, 5 - 500 Hz	sine vib 0.10 g peak, 5 - 500 Hz
	External RDX drive dock	sine vib 0.25 g peak, 3 - 200 Hz	sine vib 1.54 g peak, 10 - 250 Hz
Shock	Internal RDX drive dock	half sine 65 g at 2 ms	half sine 145 g at 2 ms
	External RDX drive dock	half sine 31 g at 5 ms	half sine 71 g at 2 ms

Performance specifications

Note: Capacity and transfer rate vary depending on the RDX cartridge type that is used.

Table 9. Environmental specifications

	RDX 320 GB media	RDX 500 GB media	RDX 750 GB media	RDX 1 TB media	RDX 1.5 TB media
Native capacity	320 GB	500 GB	750 GB	1 TB	1.5 TB
Average sustained transfer rate	USB 2.0 25 Mbps USB 3.0 230 Mbps				
Burst transfer rate	USB 480 Mbps				
Average access time	15 ms				
Function	Removable disk drive				
Command set	<ul style="list-style-type: none"> • Packet command feature set (ATA/ATAPI-7) • SCSI primary commands (SPC-2) • SCSI block commands (SBC-2) 				
Logical block size	512 bytes				
Supported file systems	ext2, ext3, FAT32 and NTFS Note: NTFS is the default file system on the RDX cartridge.				

Appendix B. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. Use this information to obtain additional information about IBM and IBM products, determine what to do if you experience a problem with your IBM system or optional device, and determine whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Check for updated firmware and operating-system device drivers for your IBM product. The IBM Warranty terms and conditions state that you, the owner of the IBM product, are responsible for maintaining and updating all software and firmware for the product (unless it is covered by an additional maintenance contract). Your IBM service technician will request that you upgrade your software and firmware if the problem has a documented solution within a software upgrade.
- If you have installed new hardware or software in your environment, check <http://www.ibm.com/systems/info/x86servers/serverproven/compat/us/> to make sure that the hardware and software is supported by your IBM product.
- Go to <http://www.ibm.com/supportportal/> to check for information to help you solve the problem.
- Gather the following information to provide to IBM Support. This data will help IBM Support quickly provide a solution to your problem and ensure that you receive the level of service for which you might have contracted.
 - Hardware and Software Maintenance agreement contract numbers, if applicable
 - Machine type number (IBM 4-digit machine identifier)
 - Model number
 - Serial number
 - Current system UEFI and firmware levels
 - Other pertinent information such as error messages and logs
- Go to http://www.ibm.com/support/entry/portal/Open_service_request/ to submit an Electronic Service Request. Submitting an Electronic Service Request will start the process of determining a solution to your problem by making the pertinent information available to IBM Support quickly and efficiently. IBM service technicians can start working on your solution as soon as you have completed and submitted an Electronic Service Request.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documentation that is provided with your IBM product. The documentation that comes with IBM systems also describes the diagnostic tests that you can perform.

Most systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the operating system or program.

Using the documentation

Information about your IBM system and preinstalled software, if any, or optional device is available in the documentation that comes with the product. That documentation can include printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to <http://www.ibm.com/supportportal/>. Also, some documents are available through the IBM Publications Center at <http://www.ibm.com/shop/publications/order/>.

Getting help and information from the World Wide Web

On the World Wide Web, up-to-date information about IBM systems, optional devices, services, and support is available at <http://www.ibm.com/supportportal/>. The address for IBM System x[®] information is <http://www.ibm.com/systems/x/>. The address for IBM BladeCenter[®] information is <http://www.ibm.com/systems/bladecenter/>. The address for IBM IntelliStation[®] information is <http://www.ibm.com/systems/intellistation/>.

How to send Dynamic System Analysis data to IBM

Use the IBM Enhanced Customer Data Repository to send diagnostic data to IBM. Before you send diagnostic data to IBM, read the terms of use at <http://www.ibm.com/de/support/ecurep/terms.html>.

You can use any of the following methods to send diagnostic data to IBM:

- **Standard upload:** http://www.ibm.com/de/support/ecurep/send_http.html
- **Standard upload with the system serial number:** http://www.ecurep.ibm.com/app/upload_hw
- **Secure upload:** http://www.ibm.com/de/support/ecurep/send_http.html#secure
- **Secure upload with the system serial number:** https://www.ecurep.ibm.com/app/upload_hw

Creating a personalized support web page

At <http://www.ibm.com/support/mynotifications/>, you can create a personalized support web page by identifying IBM products that are of interest to you. From this personalized page, you can subscribe to weekly email notifications about new technical documents, search for information and downloads, and access various administrative services.

Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems with your IBM products. For information about which products are supported by Support Line in your country or region, see <http://www.ibm.com/services/supline/products/>.

For more information about Support Line and other IBM services, see <http://www.ibm.com/services/>, or see <http://www.ibm.com/planetwide/> for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

Hardware service and support

You can receive hardware service through your IBM reseller or IBM Services. To locate a reseller authorized by IBM to provide warranty service, go to <http://www.ibm.com/partnerworld/> and click **Find Business Partners** on the right side of the page. For IBM support telephone numbers, see <http://www.ibm.com/planetwide/>. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

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

IBM Taiwan product service

台灣 IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路 7 號 3 樓
電話：0800-016-888

IBM Taiwan product service contact information:
IBM Taiwan Corporation
3F, No 7, Song Ren Rd.
Taipei, Taiwan
Telephone: 0800-016-888

Appendix C. Notices

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

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

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

*IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.*

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product, and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Trademarks

IBM, the IBM logo, and [ibm.com](http://www.ibm.com) are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at <http://www.ibm.com/legal/copytrade.shtml>.

Adobe and PostScript are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc., in the United States, other countries, or both and is used under license therefrom.

Intel, Intel Xeon, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Important notes

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

CD or DVD drive speed is the variable read rate. Actual speeds vary and are often less than the possible maximum.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1024 bytes, MB stands for 1,048,576 bytes, and GB stands for 1,073,741,824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1,000,000 bytes, and GB stands for 1,000,000,000 bytes. Total user-accessible capacity can vary depending on operating environments.

Maximum internal hard disk drive capacities assume the replacement of any standard hard disk drives and population of all hard disk drive bays with the largest currently supported drives that are available from IBM.

Maximum memory might require replacement of the standard memory with an optional memory module.

Each solid-state memory cell has an intrinsic, finite number of write cycles that the cell can incur. Therefore, a solid-state device has a maximum number of write cycles that it can be subjected to, expressed as "total bytes written" (TBW). A device that has exceeded this limit might fail to respond to system-generated commands or might be incapable of being written to. IBM is not responsible for replacement of a device that has exceeded its maximum guaranteed number of program/erase cycles, as documented in the Official Published Specifications for the device.

IBM makes no representation or warranties regarding non-IBM products and services that are ServerProven[®], including but not limited to the implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

IBM makes no representations or warranties with respect to non-IBM products. Support (if any) for the non-IBM products is provided by the third party, not IBM.

Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

Particulate contamination

Attention: Airborne particulates (including metal flakes or particles) and reactive gases acting alone or in combination with other environmental factors such as humidity or temperature might pose a risk to the server that is described in this document. Risks that are posed by the presence of excessive particulate levels or concentrations of harmful gases include damage that might cause the server to malfunction or cease functioning altogether. This specification sets forth limits for particulates and gases that are intended to avoid such damage. The limits must not be viewed or used as definitive limits, because numerous other factors, such as temperature or moisture content of the air, can influence the impact of particulates or environmental corrosives and gaseous contaminant transfer. In the absence of specific limits that are set forth in this document, you must implement practices that maintain particulate and gas levels that are consistent with the protection of human health and safety. If IBM determines that the levels of particulates or gases in your environment have caused damage to the server, IBM may condition provision of repair or replacement of servers or parts on implementation of appropriate remedial measures to mitigate such environmental contamination. Implementation of such remedial measures is a customer responsibility.

Table 10. Limits for particulates and gases

Contaminant	Limits
Particulate	<ul style="list-style-type: none"> The room air must be continuously filtered with 40% atmospheric dust spot efficiency (MERV 9) according to ASHRAE Standard 52.2¹. Air that enters a data center must be filtered to 99.97% efficiency or greater, using high-efficiency particulate air (HEPA) filters that meet MIL-STD-282. The deliquescent relative humidity of the particulate contamination must be more than 60%². The room must be free of conductive contamination such as zinc whiskers.
Gaseous	<ul style="list-style-type: none"> Copper: Class G1 as per ANSI/ISA 71.04-1985³ Silver: Corrosion rate of less than 300 Å in 30 days
<p>¹ ASHRAE 52.2-2008 - <i>Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size</i>. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.</p> <p>² The deliquescent relative humidity of particulate contamination is the relative humidity at which the dust absorbs enough water to become wet and promote ionic conduction.</p> <p>³ ANSI/ISA-71.04-1985. <i>Environmental conditions for process measurement and control systems: Airborne contaminants</i>. Instrument Society of America, Research Triangle Park, North Carolina, U.S.A.</p>	

Documentation format

The publications for this product are in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when you use the PDF files and want to request a web-based format or accessible PDF document for a publication, direct your mail to the following address:

*Information Development
IBM Corporation
205/A015
3039 E. Cornwallis Road
P.O. Box 12195
Research Triangle Park, North Carolina 27709-2195
U.S.A.*

In the request, be sure to include the publication part number and title.

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

Telecommunication regulatory statement

This product may not be certified in your country for connection by any means whatsoever to interfaces of public telecommunications networks. Further certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

Electronic emission notices

When you attach a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices that are supplied with the monitor.

Federal Communications Commission (FCC) statement

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

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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

Industry Canada Class A emission compliance statement

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

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Australia and New Zealand Class A statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Union EMC Directive conformance statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the fitting of non-IBM option cards.

Attention: This is an EN 55022 Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Responsible manufacturer:

International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

European Community contact:

IBM Deutschland GmbH
Technical Regulations, Department M372
IBM-Allee 1, 71139 Ehningen, Germany
Telephone: +49 7032 15 2941
Email: lugi@de.ibm.com

Germany Class A statement

Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:
“Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen.”

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem “Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)”. Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH
Technical Regulations, Abteilung M372
IBM-Allee 1, 71139 Ehningen, Germany
Telephone: +49 7032 15 2941
Email: lugi@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

VCCI Class A statement

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

Japan Electronics and Information Technology Industries Association (JEITA) statement

高調波ガイドライン適合品

Japanese Electronics and Information Technology Industries Association (JEITA)
Confirmed Harmonics Guideline (products less than or equal to 20 A per phase)

Korea Communications Commission (KCC) statement

이 기기는 업무용(A급)으로 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

This is electromagnetic wave compatibility equipment for business (Type A). Sellers and users need to pay attention to it. This is for any areas other than home.

Russia Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А. В жилых помещениях оно может создавать радиопомехи, для снижения которых необходимы дополнительные меры

People's Republic of China Class A electronic emission statement

声 明
此为 A 级产品。在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Taiwan Class A compliance statement

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Index

A

accessible documentation 26
assistance, getting 19
attention notices, definition of 2

C

cartridge
 description 4
 ejecting 13
 handling 12
 inserting 12
 ordering 11
cartridge-indicator LED 5
Class A electronic emission notice 26
common problems 14
components 3
contamination, particulate and
 gaseous 25
CRU list 16

D

danger statements, definition of 2
diagnostic data 20
documentation browser 1
documentation CD 1
documentation format 26
drive
 description 3
 replacing 16
Dynamic System Analysis 20

E

eject button location 5
electronic emission Class A notice 26
external drive dock guidelines 9

F

FCC Class A notice 26
front panel, component locations 5

G

gaseous contamination 25
getting help 19

H

hardware service and support 21
help, getting 19

I

IBM Support Line 21
important notices 2
installation guidelines 7
installing 8, 9
 safety 7
 utility 10
internal drive dock guidelines 8

L

LEDs 5

M

manual ejection hole
 location 5
 using 13

N

notes, definition of 2
notes, important 24
notices 23
 electronic emission 26
 FCC, Class A 26

O

option list 11

P

packaging 8, 16
particulate contamination 25
parts list 8, 11, 16
power-indicator LED 5
problems 14
public services network, use in 26
public telecommunications network,
 connection to 26

R

replacing the drive 16

S

software
 utility 4, 10, 14
software service and support 21
specifications
 environmental 17
 performance 18
 physical 17
 power 17
statements and notices 2

static-sensitive devices 7
status LEDs 5

T

telephone numbers 21
terms 2
terms, definition of 2
trademarks 23

U

United States electronic emission Class A
 notice 26
United States FCC Class A notice 26
utility software 4, 5, 10, 14

W

website
 personalized support 20
 publication ordering 20
 support line, telephone numbers 21



Part Number: 00V9754

Printed in USA

(1P) P/N: 00V9754

