

IBM TotalStorage DS4000 Alert Manager Appliance



# Planning and Installation Guide



IBM TotalStorage DS4000 Alert Manager Appliance



# Planning and Installation Guide

**Note:**

Before using this information and the product it supports, be sure to read the general information in "Notices" on page 11.

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## Safety

The caution and danger statements that this document contains can be referenced in the multilingual *IBM® Safety Information* document that is provided with your IBM TotalStorage® product. Each caution and danger statement is numbered for easy reference to the corresponding statements in the translated document.

- **Danger:** These statements indicate situations 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.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.

Before installing this product, read the following danger and caution notices.

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.**

<b>To Connect:</b>	<b>To Disconnect:</b>
<ol style="list-style-type: none"><li>1. Turn everything OFF.</li><li>2. First, attach all cables to devices.</li><li>3. Attach signal cables to connectors.</li><li>4. Attach power cords to outlet.</li><li>5. Turn device ON.</li></ol>	<ol style="list-style-type: none"><li>1. Turn everything OFF.</li><li>2. First, remove power cords from outlet.</li><li>3. Remove signal cables from connectors.</li><li>4. Remove all cables from devices.</li></ol>

**Statement 3:**



**CAUTION:**

When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.



**DANGER**

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.




**Class 1 Laser statement**

Class 1 Laser Product  
Laser Klasse 1  
Laser Klasse 1  
Luokan 1 Laserlaitte  
Appareil À Laser de Classe 1

IEC 825-11993 CENELEC EN 60 825

**Statement 4:**



		
≥ 18 kg (39.7 lb)	≥ 32 kg (70.5 lb)	≥ 55 kg (121.2 lb)

**CAUTION:**

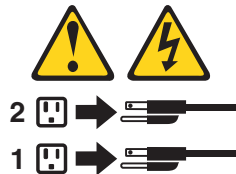
Use safe practices when lifting.

**Statement 5:**



**CAUTION:**

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





**Statement 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.**



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## About this document

This guide provides technical specifications and information you will need to properly install the IBM TotalStorage DS4000 Alert Manager Appliance.

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## Who should read this document

This document is intended for system operators and service technicians who have extensive knowledge of fibre channel and network technology.

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## How this document is organized

Chapter 1, "Planning for installation," on page 1 provides information about planning for the installation of the DS4000 Alert Manager Appliance.

Chapter 2, "Installing the DS4000 Alert Manager Appliance," on page 5 provides instructions for installing the DS4000 Alert Manager Appliance.

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## Notices and statements used in this document

The caution and danger statements used in this document also appear in the multilingual *IBM Safety Information* document provided with your DS4000 Alert Manager Appliance. Each caution and danger statement is numbered for easy reference to the corresponding statements in the safety document.

The following types of notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations 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.

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## Getting information, help, and service

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your IBM @server xSeries® or IntelliStation® system, and 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 is turned on.
- Use the troubleshooting information in your system documentation and use the diagnostic tools that come with your system.
- Check for technical information, hints, tips, and new device drivers at the following Web site:  
[www.ibm.com/storage/techsup.htm](http://www.ibm.com/storage/techsup.htm)
- Use an IBM discussion forum on the IBM Web site to ask questions.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documents that are provided with your system and software. The information that comes with your system also describes the diagnostic tests that you can perform. Most xSeries and IntelliStation systems, operating systems, and programs come with information that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the information for the operating system or program.

## Using the documentation

Information about the xSeries or IntelliStation system and preinstalled software, if any, is available in the documents that come with your system. This includes printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions on how to use the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software.

## Web sites

IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates.

- For DS4000 information, go to the following Web site:  
[www.ibm.com/servers/storage/support/disk/](http://www.ibm.com/servers/storage/support/disk/)  
 The support page has many sources of information and ways for you to solve problems, including:
  - Diagnosing problems using the IBM Online Assistant
  - Downloading the latest device drivers and updates for your products
  - Viewing frequently asked questions (FAQ)
  - Viewing hints and tips to help you solve problems
  - Participating in IBM discussion forums
  - Setting up e-mail notification of technical updates about your products
- You can order publications through the IBM Publications Ordering System at the following web site:  
[www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi/](http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi/)
- For the latest information about IBM xSeries products, services, and support, go to the following Web site:  
[www.ibm.com/eserver/xseries/](http://www.ibm.com/eserver/xseries/)
- For the latest information about IBM pSeries® products, services, and support, go to the following Web site:  
[www.ibm.com/eserver/pseries/](http://www.ibm.com/eserver/pseries/)
- For the latest information about the IBM IntelliStation information, go to the following Web site:

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- For the latest information about operating system and HBA support, clustering support, SAN fabric support, and Storage Manager feature support, see the TotalStorage DS4000 Interoperability Matrix at the following Web site:  
[www.storage.ibm.com/disk/fastt/supserver.htm](http://www.storage.ibm.com/disk/fastt/supserver.htm)

## Hardware service and support

You can receive hardware service through IBM Integrated Technology Services. Go to the following Web site for support telephone numbers:

[www.ibm.com/planetwide/](http://www.ibm.com/planetwide/)

Service is available for the Alert Manager Appliance according to the same terms and conditions of the maintenance agreement or warranty in effect for the attached DS4000 subsystems.

## Fire suppression systems

A fire suppression system is the responsibility of the customer. The customer's own insurance underwriter, local fire marshal, or a local building inspector, or both, should be consulted in selecting a fire suppression system that provides the correct level of coverage and protection. IBM designs and manufactures equipment to internal and external standards that require certain environments for reliable operation. Because IBM does not test any equipment for compatibility with fire suppression systems, IBM does not make compatibility claims of any kind nor does IBM provide recommendations on fire suppression systems.

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## How to send your comments

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- Internet: [starpubs@us.ibm.com](mailto:starpubs@us.ibm.com)
- IBMLink™ from U.S.A.: STARPUBS at SJEVM5
- IBMLink from Canada: STARPUBS at TORIBM
- IBM Mail Exchange: USIB3WD at IBMMAIL

You can also mail your comments by using the Reader Comment Form in the back of this manual or direct your mail to:

International Business Machines Corporation  
Information Development  
Dept. GZW  
9000 South Rita Road  
Tucson, AZ 85744-0001  
U.S.A.



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## Chapter 1. Planning for installation

This chapter discusses the tasks required to prepare for the installation of the DS4000 Alert Manager Appliance. IBM Service performs the remote configuration of the DS4000 Alert Manager Appliance, but you must install the appliance and cables prior to calling IBM Service.

The following parts come with the DS4000 Alert Manager Appliance:

- Two release-latch-bracket assemblies (one left and one right)
- Four rack-support wheels
- Two slide rails
- Miscellaneous hardware kit (includes screws, cage nuts, and clip nuts to install the appliance in a rack cabinet)
- Serial cables (as purchased with the appliance)

This chapter discusses the following topics:

- “Completing the data collection worksheet”
- “Connection and installation considerations” on page 2
- “Installation process overview” on page 3

---

### Completing the data collection worksheet

The data collection worksheet is completed as part of the ordering process and provides IBM with information needed to ship the appropriate hardware and configure the DS4000 Alert Manager Appliance during installation. IBM Service will review the contents of the worksheet with you during the installation to verify that the information provided during the order process is still valid.

The main portions of the data collection worksheet are discussed in the following sections.

#### Contact information

Provide shipping information for sending the appliance to your site and contact information to enable IBM to contact your staff if a problem occurs. Be sure to include country codes for the phone number.

#### Location of the appliance

Provide the number of the analog phone line to be connected to the modem adapter in the appliance. Calls made to the appliance for remote service will be made from the United States, so include country codes in the number. Indicate whether an access code is required for the DS4000 Alert Manager Appliance to reach an outside line when dialing out. Also include the location where the appliance is to be installed (in case the appliance is not to be installed at the location to which it was shipped).

#### Procedural choices

These sections specify procedures that IBM Service should follow related to appliance operation and alert response.

### Remote access permissions

Indicate whether the appliance is normally connected to a phone line and whether IBM Service should contact your staff before connecting to the appliance.

**Note:** If the appliance is not connected to a phone line, then monitoring of problems cannot be performed. In this case, the appliance is used only for remote access to a DS4000 storage server when a problem has been reported to IBM Service.

### Heartbeat access permissions

Indicate whether heartbeat checks are permitted. During a heartbeat check, IBM Service dials into the appliance to verify that the phone line and appliance are operational. There is no access to any DS4000 storage server during a heartbeat check. You may choose to permit or not permit calls to the appliance to perform these checks.

## Subsystem details (page 2 of the worksheet)

The DS4000 Alert Manager Appliance can monitor up to four DS4000 storage servers. If your initial installation monitors less than four storage servers, then you can add monitoring for more storage servers in the future. (For more information, see “Adding additional DS4000 storage servers to an existing DS4000 Alert Manager Appliance configuration” on page 9.) Specify information about each of the storage servers to be attached to the appliance in the table on page 2 of the worksheet.

**Attention:** The storage server names given should match precisely the storage server names used in IBM DS4000 Storage Manager.

Serial attachment cables are available in 16 ft. (4.8 m) and 50 ft. (15 m) lengths. Indicate which length is needed to attach each storage server.

The “New or existing” column of the table is used when adding a new DS4000 storage server to an existing DS4000 Alert Manager Appliance. Indicate “Existing” for the previously installed DS4000 storage server(s) and “New” for the storage servers being added.

The following example shows sample details for three DS4000 storage servers.

*Table 1. Subsystem details example*

Machine type	Serial number	Subsystem name	New or existing	Length of cables needed	Number of controllers
1742-1RU	23A3040	KeyBiscayne	New	16	2
1722-6LU	23B0211	KeyLargo	New	16	1
1742-90U	23A3110	KeyWest	New	50	2

## Connection and installation considerations

The following connections are required when installing the DS4000 Alert Manager Appliance. These connections should be provided at the installation site.

- Analog phone line – A dedicated analog phone line with long distance capabilities is required. Document the phone number assigned to this line.

**Note:** The included phone cord has an RJ-11 connector. You might need an adapter if the analog phone line being used by the DS4000 Alert Manager Appliance has a different type of connector.

- AC power source – One standard 110v or 230v AC source within the rack is required. Use of an Uninterruptible Power Supply (UPS) is recommended.

**Note:** The DS4000 Alert Manager Appliance is shipped with a 230v configuration.

In addition, review the following installation considerations:

- Serial connections – When you connect DS4000 storage servers to the DS4000 Alert Manager Appliance, both serial line interfaces on each of the monitored DS4000 storage servers will be used in order to provide remote diagnostics. This should have minimal impact, since serial interfaces are not supported for normal operation.
- Firmware upgrade – Only controllers running firmware version 05.3x or higher are eligible for remote monitoring. If the firmware is not at this level or higher, you must upgrade the controllers, which might require downtime for the host. It is recommended that you upgrade the controller firmware to the latest level appropriate for the controller model.

To download controller firmware, check the IBM support Web site for DS4000 storage products:

[www.ibm.com/servers/storage/support/disk/](http://www.ibm.com/servers/storage/support/disk/)

- Maintenance of Equipment – After the equipment is installed, IBM will monitor and provide maintenance for the equipment. No local access to the equipment is required or provided.

**Notes:**

1. If the DS4000 Alert Manager Appliance is being installed in an existing rack, four rack spaces (approximately 7 inches) of empty rack space are required. In addition, one power connector must be available within the rack where the DS4000 Alert Manager Appliance will be installed.
2. Installation of equipment, including testing, takes approximately 60 minutes. However, this time estimate does not include possible firmware upgrade procedures that might be required.
3. Rebooting the DS4000 controllers may be required, so plan these reboots during a scheduled maintenance period.

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## Installation process overview

The following steps provide an overview of the installation process for the DS4000 Alert Manager Appliance.

**Note:** These steps are a summary of the installation process. For full details on how to install the DS4000 Alert Manager Appliance, see Chapter 2, “Installing the DS4000 Alert Manager Appliance,” on page 5.

1. Install the rack cabinet rails and mount the appliance in a rack cabinet.
2. Connect the serial, power, and phone cables.
3. Contact IBM Service to complete the configuration of the appliance.
  - a. IBM Service will verify that all of information on the worksheet that was completed when the service was ordered is still correct.
  - b. The DS4000 Alert Manager Appliance will then be remotely configured by IBM Service.

- c. You will be notified when configuration is complete and the appliance is operational.



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## Chapter 2. Installing the DS4000 Alert Manager Appliance

This chapters provides the installation procedure for the DS4000 Alert Manager Appliance.

This chapter discusses the following topics:

- “Handling static-sensitive devices”
- “Installing the DS4000 Alert Manager Appliance”
- “Adding additional DS4000 storage servers to an existing DS4000 Alert Manager Appliance configuration” on page 9

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### Handling static-sensitive devices

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

To reduce the possibility of electrostatic discharge (ESD), observe the following precautions:




- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its static-protective package, touch it to an unpainted metal part of the system unit for at least two seconds. This drains static electricity from the package and from your body.
- Remove the device from its package and install it directly into your system unit without setting it down. If it is necessary to set the device down, place it in its static-protective package. Do not place the device on your system unit cover or on a metal table. Take additional care when handling devices during cold weather because heating reduces indoor humidity and increases static electricity.

---

### Installing the DS4000 Alert Manager Appliance

**Statement 4:**



		
≥ 18 kg (39.7 lb)	≥ 32 kg (70.5 lb)	≥ 55 kg (121.2 lb)

**CAUTION:**  
**Use safe practices when lifting.**

**Attention:** The DS4000 Alert Manager Appliance weighs up to 20.5 kg (45 lb). At least two persons are required to safely lift the DS4000 Alert Manager Appliance from the shipping box and to place it in the rack cabinet.

Use the following procedure to install the DS4000 Alert Manager Appliance:

1. Verify that the controller firmware version for all attached storage servers is at 05.3x or higher. Only controllers running firmware version 05.3x or higher are eligible for remote monitoring.

If the firmware is not at version 05.3x or higher, you must upgrade the controllers, which might require downtime for the host. It is recommended that you upgrade the controller firmware to the latest level appropriate for the controller model.

To download controller firmware, check the IBM support web site for DS4000 storage products:

[www.ibm.com/servers/storage/support/disk/](http://www.ibm.com/servers/storage/support/disk/)

2. Put on antistatic protection. You must wear antistatic protection throughout the installation process. Do not remove the antistatic protection until you have completed the installation of all hardware. See “Handling static-sensitive devices” on page 5.
3. Install the support rails into the rack cabinet. Refer to the rack mounting instructions shipped with the cabinet support rails.

Ensure that a stabilizer has been correctly attached to the bottom front of the rack cabinet to prevent the rack cabinet from tipping forward while the DS4000 Alert Manager Appliance is being installed.

**Attention:** A rack mount cabinet can become top-heavy and may tip over if you install equipment in the top of the cabinet while leaving the bottom portion empty. Always install hardware in the lowest available position in a cabinet.

4. Install the release-latch-bracket assemblies on the DS4000 Alert Manager Appliance.

**Note:** The release-latch-brackets, screws, and rack-support wheels needed to install the appliance in a rack cabinet are included in a separate plastic bag with the appliance.

- a. Align the bracket marked with an **L** with the holes on the left side of the system; then, use two of the M3.5 screws that come with this kit to attach the bracket to the DS4000 Alert Manager Appliance.

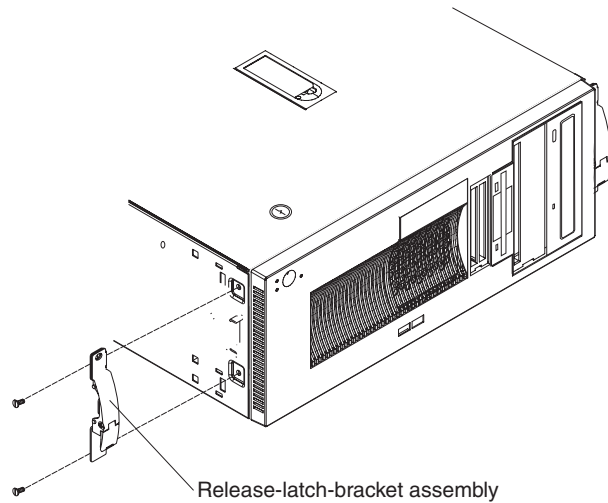


Figure 1. Installing the release-latch-bracket assemblies

- b. Repeat this step to install the other release-latch-bracket assembly on the right side of the DS4000 Alert Manager Appliance.
5. Attach the four rack-support wheels to the uppermost holes on the sides of the DS4000 Alert Manager Appliance.

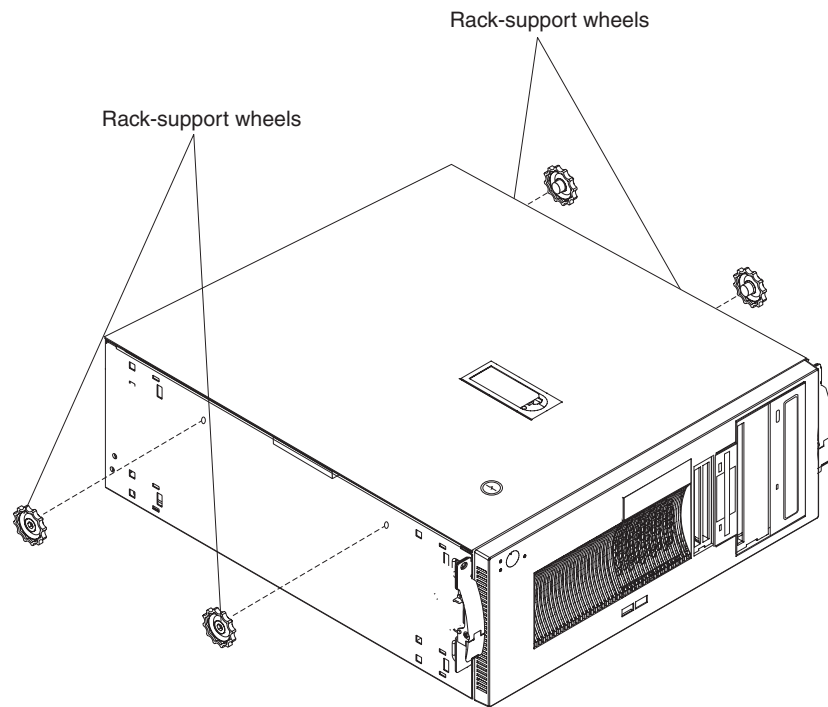


Figure 2. Attaching the rack-support wheels

6. Install the appliance in the rack cabinet.
7. Connect the serial cables from the multi-port serial card in the DS4000 Alert Manager Appliance to each storage server controller, as shown in Figure 1. You can identify the DS4000 Alert Manager Appliance-specific serial cables by the red band at one end of each cable.

Connect the cables to the DS4000 Alert Manager Appliance beginning with port 1 at the top of the serial card (as viewed from the back of the appliance). Connect the subsystems to the serial ports in the same order they are listed in the data collection worksheet, such that the first storage server listed is connected to ports 1 and 2.

**Important:** Connect serial cables for storage server controller pairs in adjacent ports, starting with an odd-numbered port (port 1, then port 2, 3-4, 5-6, 7-8). If a storage server with a single controller is added, connect the single controller to the odd-numbered port and skip the following even-numbered port. (For example, add the single controller to port 1, skip port 2, and then begin connecting the next storage server with port 3.)

**Note:** The serial cables for the FAST200 (machine type 3542) storage server have the same connectors at both ends. When connecting the DS4000 Alert Manager Appliance to a FAST200, be sure to connect the red-banded end of the serial cable to the serial port on the DS4000 Alert Manager Appliance.

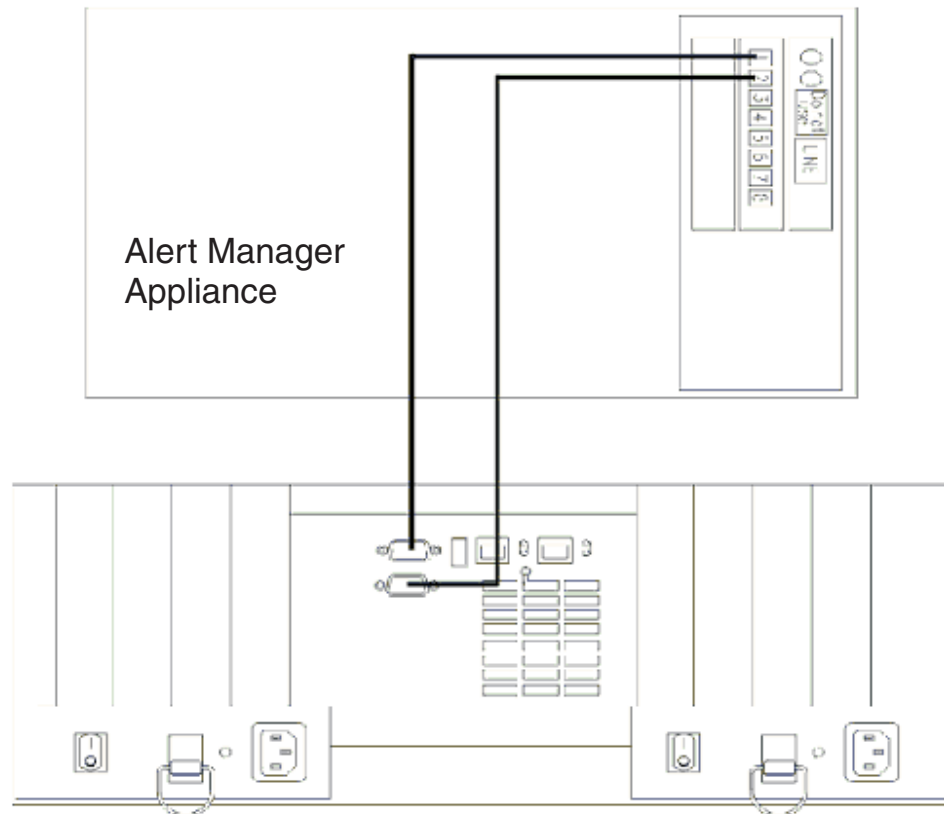


Figure 3. Serial cable connections

8. Ensure that all storage servers to be monitored by the DS4000 Alert Manager Appliance are powered on and available for use.
9. Connect the DS4000 Alert Manager Appliance to the analog telephone line at the installation site.

- a. Connect one end of the analog telephone cable to the bottom port on the DS4000 Alert Manager Appliance modem (labeled “Line” in Figure 1 on page 7.)
  - b. Connect the other end of the phone cable to the analog telephone line that was specified on the data collection worksheet.
10. Connect the DS4000 Alert Manager Appliance power cable to the power ladder cables inside the cabinet.
11. Turn on power to the DS4000 Alert Manager Appliance.
12. Call IBM Service and provide the IBM machine type and serial number of one of the DS4000 storage servers attached to the DS4000 Alert Manager Appliance so that your call will be routed to the IBM TotalStorage Support Center. Follow the instructions provided by the technical support representative to complete the configuration.

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## **Adding additional DS4000 storage servers to an existing DS4000 Alert Manager Appliance configuration**

The DS4000 Alert Manager Appliance can monitor up to four DS4000 storage servers. If your initial installation monitors less than four storage servers, then you can connect additional storage servers to the DS4000 Alert Manager Appliance.

To add a new DS4000 storage server to an existing DS4000 Alert Manager Appliance, perform the following steps:

1. Contact IBM Sales to order the additional serial cables needed for the new DS4000 storage server or servers to be monitored.
2. After you have received the additional serial cables, connect the new DS4000 storage server or servers to the DS4000 Alert Manager Appliance. Follow step 7 on page 7 through step 9 on page 8.
3. Contact IBM Service to update the DS4000 Alert Manager Appliance configuration.



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## Important notes

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

CD-ROM drive speeds list the variable read rate. Actual speeds vary and are often less than the maximum possible.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for approximately 1000 bytes, MB stands for approximately 1 000 000 bytes, and GB stands for approximately 1 000 000 000 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 may 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 available from IBM.

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

IBM makes no representation or warranties regarding non-IBM products and services that are ServerProven<sup>®</sup>, 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.

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

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## Product recycling and disposal

This unit contains materials such as circuit boards, cables, electromagnetic compatibility gaskets, and connectors which may contain lead and copper/beryllium alloys that require special handling and disposal at end of life. Before this unit is disposed of, these materials must be removed and recycled or discarded according to applicable regulations. IBM offers product-return programs in several countries.



Information on product recycling offerings can be found on IBM's Internet site at <http://www.ibm.com/ibm/environment/products/prp.shtml>.

IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of programs and services to assist equipment owners in recycling their IT products. Information on product recycling offerings can be found on IBM's Internet site at <http://www.ibm.com/ibm/environment/products/prp.shtml>.

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## Battery return program

This product may contain a sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery. Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries outside the United States, see <http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml> or contact your local waste disposal facility.

In the United States, IBM has established a return process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and battery packs from IBM equipment. For information on proper disposal of these batteries, contact IBM at 1-800-426-4333. Have the IBM part number listed on the battery available prior to your call.

In the Netherlands, the following applies.



For Taiwan: Please recycle batteries.



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## Electronic emission notices

IBM IntelliStation M Pro Types 6225 and 6228

## Federal Communications Commission (FCC) statement

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no


guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. 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.

Responsible party:  
International Business Machines Corporation  
New Orchard Road  
Armonk, NY 10504  
Telephone: 1-919-543-2193

 Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

## **Industry Canada Class B emission compliance statement**

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

## **Avis de conformité à la réglementation d'Industrie Canada**

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

## **European Union EMC Directive conformance statement**

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. 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. This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

## Japanese Voluntary Control Council for Interference (VCCI) statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。  
取扱説明書に従って正しい取り扱いをして下さい。

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### Power cords

For your safety, IBM provides a power cord with a grounded attachment plug to use with this IBM product. To avoid electrical shock, always use the power cord and plug with a properly grounded outlet.

IBM power cords used in the United States and Canada are listed by Underwriter's Laboratories (UL) and certified by the Canadian Standards Association (CSA).

For units intended to be operated at 115 volts: Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, Type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a parallel blade, grounding-type attachment plug rated 15 amperes, 125 volts.

For units intended to be operated at 230 volts (U.S. use): Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, Type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a tandem blade, grounding-type attachment plug rated 15 amperes, 250 volts.

For units intended to be operated at 230 volts (outside the U.S.): Use a cord set with a grounding-type attachment plug. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed.

IBM power cords for a specific country or region are usually available only in that country or region.



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