IBM Netfinity

**Advanced Systems Management PCI Adapter
Installation Instructions**

IBM IBM Netfinity

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Installation Instructions**

> **Important**
>
> Before using this information and the product it supports, be sure to read the general information under Appendix C, "Product Warranties and Notices" on page 20.

Contents

Safety Information

Safety Statement

⚠

Before installing this product, read the Safety Information that comes with your server.

Antes de instalar este produto, leia as Informações sobre Segurança fornecidas com seu servidor.

在安装本产品之前，请仔细阅读您的服务器随机
附带的安全信息(Safty Information)。

Prije instalacije ovog proizvoda obavezno proučite
sigurnosne upute koje se isporučuju uz vaš server.

**Před instalací tohoto zařízení si přečtěte bezpečnostní informace (Safety Information),
které byly dodané s vaším serverem.**

Läs de sikkerhedsforskrifter, der leveres sammen med serveren, inden du installerer dette produkt.

Lue palvelimen mukana toimitettu Safety Information -julkaisu, ennen kuin asennat tämän tuotteen.

Avant d'installer ce produit, vous devez lire la documentation contenant les consignes de sécurité qui a été livrée avec votre serveur.

Bevor Sie das Produkt installieren, lesen Sie bitte die Sicherheitsinformationen, die mit dem Server mitgeliefert werden.

Πριν εγκαταστήσετε το προϊόν, διαβάστε τις Πληροφορίες Ασφάλειας (Safety Information) που περιλαμβάνονται στη συσκευασία του εξυπηρετητή.

Mielőtt használná a terméket, kérjük olvassa el a kiszolgálóhoz tartozó Biztonsági tájékoztatót!

Prima di installare questo prodotto, leggere le Informazioni relative alla sicurezza accluse al server.

本製品を設置する前に、サーバーに付属の「安全情報」をお読みください。

이 제품을 설치하기 전에 서버와 함께 제공되는 안전 정보를 읽으십시오.

Пред да го инсталирате овој производ, прочитајте ги
безбедносните информации кои доаѓаат со Вашиот
сервер.

Lees voordat u dit product installeert eerst de Veiligheidvoorschriften die bij de server zijn geleverd.

Les sikkerhetsinformasjonen som kommer med tjeneren, før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa", która jest dostarczana razem z serwerem.

Antes de instalar este produto, não deixe de ler as Informações sobre Segurança enviadas com o servidor.

Перед установкой данного продукта прочтите инструкцию по технике безопасности, которая прилагалась к вашему серверу.

Pred inštaláciou tohto zariadenia si prečítajte Bezpečnostné predpisy, ktoré boli dodané spolu so servrom.

Pred namestitvijo tega proizvoda preberite Varnostne informacije, ki so priložene k strežniku.

Antes de instalar este producto, lea la información de seguridad que viene con el servidor.

Innan du installerar den här produkten, läs säkerhetsinformationen som följer med servern.

安裝本產品前，請先詳讀隨本伺服器附上的「安全資訊」。

Lithium battery notice

CAUTION:
Danger of explosion if battery is incorrectly replaced.

When replacing the battery, use only IBM Part Number 10L9284 or an equivalent type battery recommended by the manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not:

- **Throw or immerse into water**
- **Heat to more than 100°C (212°F)**
- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

ATTENTION
Danger d'explosion en cas de remplacement incorrect de la batterie.

Remplacer uniquement par une batterie IBM de type 10L9284 ou d'un type équivalent recommandé par le fabricant. La batterie contient du lithium et peut exploser en cas de mauvaise utilisation, de mauvaise manipulation ou de mise au rebut inappropriée.

Ne pas :

- **Lancer ou plonger dans l'eau**
- **Chauffer à plus de 100°C (212°F)**
- **Réparer ou désassembler**

Mettre au rebut les batteries usagées conformément aux règlements locaux.

Introduction

The IBM Netfinity Advanced Systems Management PCI Adapter (ASMA) (hereafter called adapter) provides monitoring and event recording functions for PCI systems when used with Netfinity Manager version 5.20.4 or later.

Installation Requirements

The IBM Netfinity Advanced Systems Management PCI Adapter can be installed only in PCI systems. The adapter is supported by the Advanced System Management service, included with the Netfinity Manager CD-ROM that comes with your option. Refer to the Netfinity Manager documentation for instructions on using your IBM Netfinity Advanced Systems Management PCI Adapter.

You can access the latest information about product updates on the IBM Netfinity World Wide Web page at `http://www.pc.ibm.com/servers/` Along with these instructions, this option contains:

- IBM Netfinity Advanced Systems Management PCI Adapter Option

    - Advanced System Management PCI Adapter

    - Power supply adapter

    - Power cord

    - Dual serial cable

    - Internal (IBM) Advanced System Management Interconnect cable

    - Advanced System Management Interconnect cable
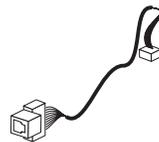
Internal (IBM) Advanced System Management
Interconnect Cable
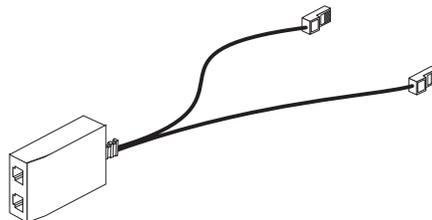
Advanced System Management
Interconnect Cable

    - Advanced System Management CD-ROM

    - Netfinity Manager version 5.20.4 CD-ROM

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

This book is intended for a network administrator—that is, the individual responsible for configuring, maintaining, managing, and troubleshooting a Netfinity Server.

Installation Requirements

To install this option, you will need the following:

- Tools to remove your system covers
- Tools to remove expansion slot covers
- The documentation that comes with your server

Handling Static-Sensitive Devices

The IBM Netfinity Advanced Systems Management PCI Adapter is a sensitive electronic device and should be handled with care.

> **Attention**
>
> Static electricity can damage your equipment. Do not take the option out of its static-protective package until the instructions tell you to do so.

When you handle options and other computer components, take these precautions to avoid static electricity damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always handle options carefully. Handle adapters by the edges.
- Never touch any exposed circuitry.
- Prevent others from touching the option.
- Before opening the static-protective package containing the option, touch the package to any unpainted metal surface on the system, such as the metal expansion-slot covers, for at least 2 seconds. (The location of the metal expansion-slot covers is shown in the documentation that comes with your system.) Touching an unpainted metal surface reduces the static electricity in the package and in your body.
- When possible, remove the option from the package and install it directly into the system without putting the option down. If you must put the option down, place the static-protective package the option came in on a smooth, level surface and place the option, component side up, on the package. If a static-protective package is not available, use a piece of paper.
- Do not place the option on the system cover or other metal surface.

Go to "Installing the Adapter" on page 3 for adapter installation instructions.

Installing the Adapter

The adapter installation procedures are described in the following sections.

> **Before you begin, be sure you have:**
>
> Read "Safety Information" on page iv and "Handling Static-Sensitive Devices" on page 2.

To install the adapter, complete the following steps.

1. Ensure that the system power is off and the power cord is unplugged from the electrical outlet.

2. Disconnect all cables and cords from the system.

3. Remove the server cover. If necessary, refer to the documentation that comes with your system for instructions.

4. Determine the PCI slot in which to install the adapter. Refer to the documentation that comes with your system to see if there is any specific PCI slot required or recommended for this adapter.

5. Remove the expansion slot cover for the PCI slot you are going to install the adapter in.

6. If you are going to use a token ring connection, go to "Using a Token Ring Connection" on page 4. Otherwise, install the adapter in the system board PCI slot you have selected. Refer to your system documentation for adapter installation instructions.

7. Reconnect all cables and cords to the system.

Determining your next step

Read the following information to determine which step to perform next.

- If you are going to use a serial connection, go to "Using a Serial Connection" on page 6.
- If you are going to use a Advanced System Management (ASM) Interconnect connection, go to "Using an Advanced System Management Interconnect Connection" on page 7.

Using a Token Ring Connection

If you are going to use a token ring connection, you need to purchase the Advanced System Management Token Ring Connection option.

You will need the following materials to install this option:

- Small flat–bladed screwdriver
- 5mm or 3/16" nutdriver
- The Server Library that was included with your Netfinity server

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Attention

After you have installed the Netfinity Advanced System Management Token Ring Connection, you must not enable or use the Ethernet port that is included on your Advanced System Management PCI Adapter. Enabling the Ethernet port while the IBM Turbo 16/4 Token Ring PCMCIA card is installed on your adapter will cause your system to become unstable. To enable, configure, or use the Ethernet port, you **must** first remove the IBM Turbo 16/4 Token Ring PCMCIA card from your Advanced System Management PCI Adapter.

To install the Advanced System Management Token Ring Connection, do the following:

1. Install the PCMCIA card **2** into the PCMCIA slot on the adapter **1** as shown in the following figure.
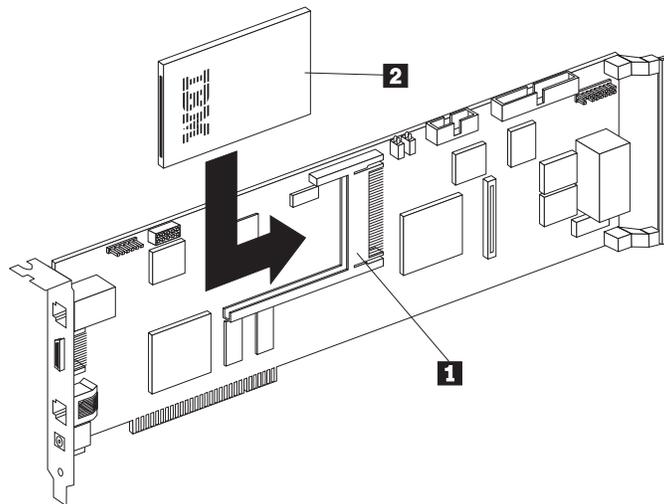
2. Connect one end of the token ring cable **2** to the PCMCIA connector on the PCMCIA card **1** as shown in the following figure.
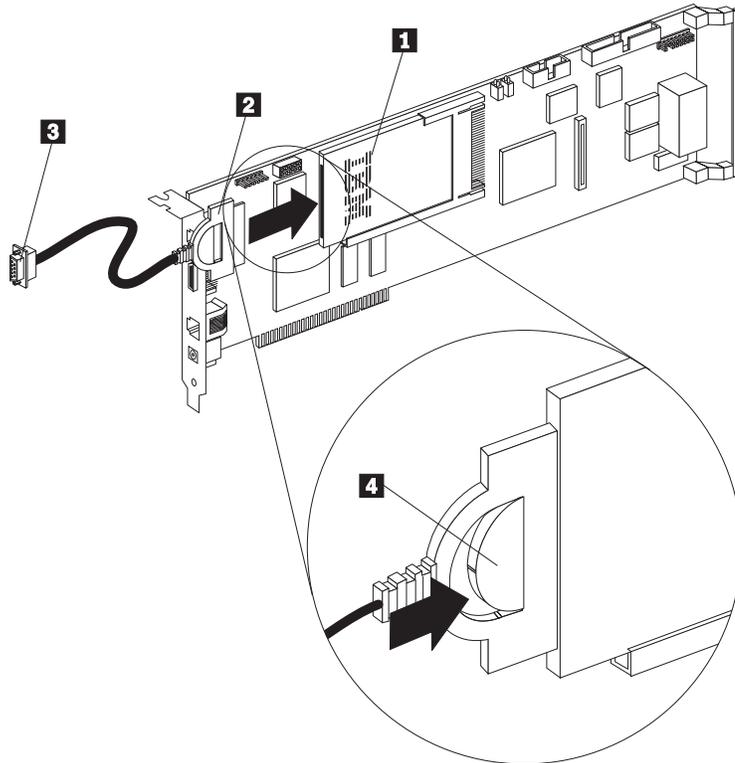
3. Lock the PCMCIA connector by pushing the slide **4** forward as shown.

4. Locate and remove the square external connector knockout on the back panel of your server.

   To locate the external connector knockout on the back panel of your server, see the Server Library that was included with your server.

   To remove the square external connector knockout, use a flat blade screwdriver to carefully tap the bottom edge of the knockout panel. The knockout will bend toward the interior of the server. After the external connector knockout has bent in slightly, insert the tip of the screwdriver between the edge of the knockout and the back panel of your server and gently pry the knockout off.

   > **Attention**
   >
   > Be careful not to bend the back panel of the server while removing the knockout.

5. Install the adapter in the system board PCI slot you have selected. Refer to your system documentation for adapter installation instructions.

6. Insert the end of the token ring cable **3** into the external connector opening and secure it in place with the included screws.

7. Reconnect all cables and cords to the system.

Go to "Completing the Installation" on page 9 to complete the installation.

Using a Serial Connection

If you are using a serial connection with your adapter, connect the serial cable to the adapter as follows:

1. Connect the serial connector on the serial cable **1** to the serial port on the back of the adapter **2**
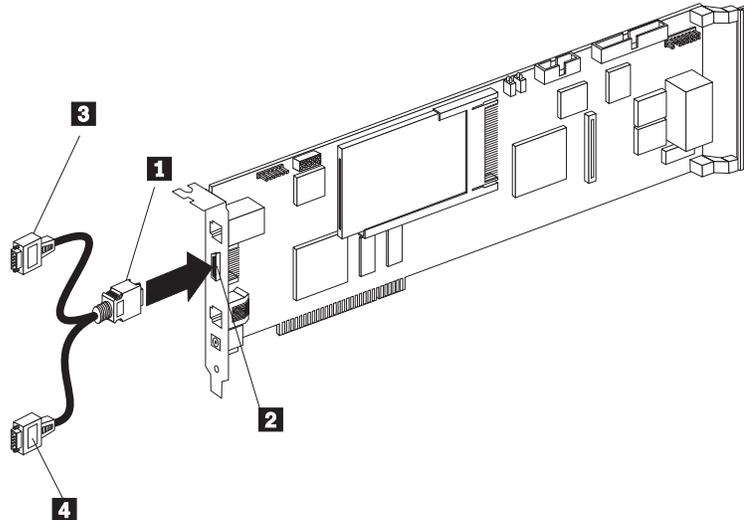
2. Connect either of the two serial connectors **3** or **4** to the device you want to connect the adapter to.

   Note: Each of the two serial connectors is labeled to help you determine which connector to use for your particular device. One connector is labeled "MODEM" and the other is labeled "COM_AUX."

Go to "Completing the Installation" on page 9 to complete the installation.

Using an Advanced System Management Interconnect Connection

If you are using a Advanced System Management (ASM) Interconnect connection with your adapter, do the following:

1. Connect the Internal (IBM) Advanced System Management Interconnect cable **3** by connecting one end to the RS-485 connector on the system board **2** and pushing the other end into the knockout slot **1** on the back of the system until it locks into place. Refer to the documentation that comes with your system to determine which knockout to use.
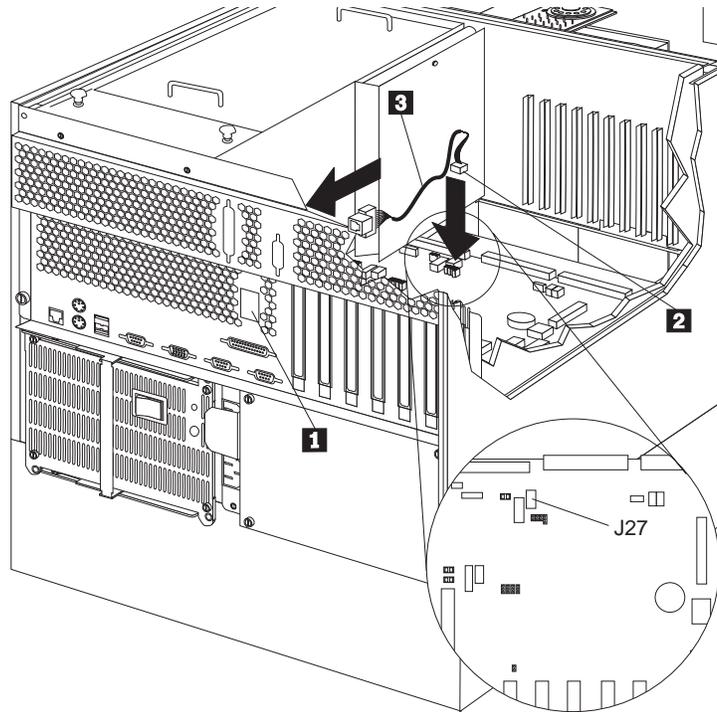
2. Connect the RJ-11 connector on the Advanced System Management Interconnect cable **3** to the connector you just installed in the knockout on the back of the server **1**.

3. Connect the other connector on the Advanced System Management Interconnect cable to the RJ-11 connector on the adapter **2**.
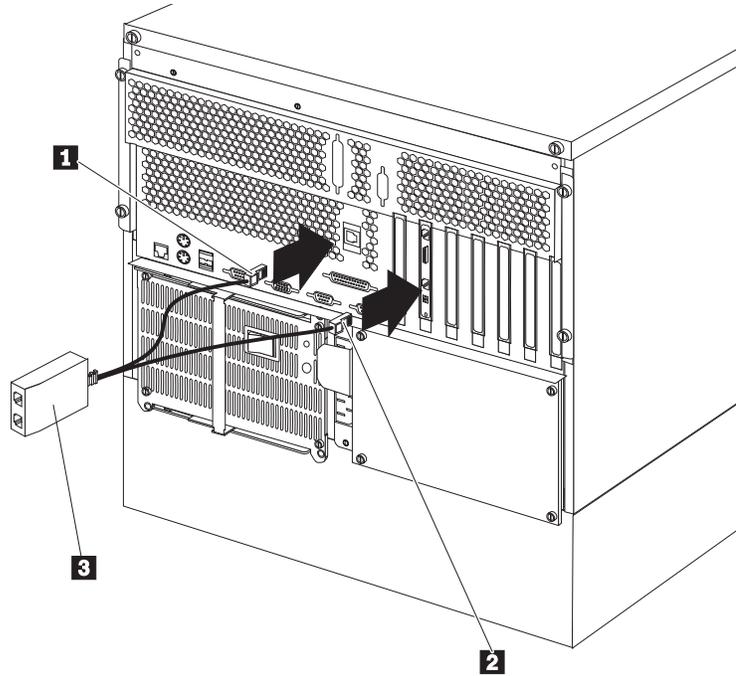
Go to "Completing the Installation" on page 9 to complete the installation. For more information on connecting your system to and using your system in an Advanced System Management Interconnect network, see "Setting Up and Using Your Advanced System Management Interconnect Network" on page 12.

Completing the Installation

To complete the installation of the adapter, do the following:

1. Install the cover back onto your system.

2. Install the power unit adapter **3** by connecting the power unit control cable **2** to the connector on the adapter **1** .
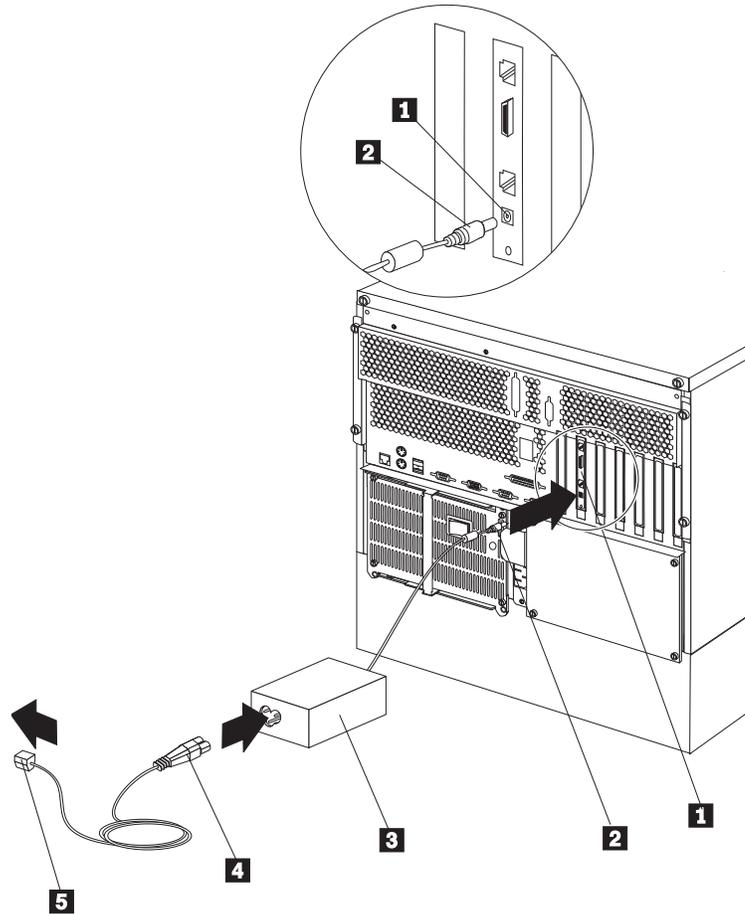
3. Connect the power unit power cord **4** to the connector on the power unit adapter **3** .

4. Connect the system power cord **5** to an electrical outlet.

Go to "Configuring the Adapter" on page 10 for adapter configuration procedures.

Configuring the Adapter

To configure the adapter, do the following:

1. Power up the system.

2. Insert the CD-ROM that came with this option into the CD-ROM drive.

   Note: Be sure to insert the CD in the CD-ROM drive and close the CD-ROM drive before the server completes POST. If you do not insert the CD and close the CD-ROM drive before POST completes, you must restart the server.

3. Use the arrow keys to select **Update System Management Firmware** from the menu that appears on the screen.

   The system performs an Advanced System Management firmware update.

4. When complete, press **Enter** and follow the instructions on the screen to return to the menu.

5. Use the arrow keys to select **Exit Utility** from the menu or press **Esc** to close the configuration utility.

6. Remove the CD-ROM.

7. The system restarts automatically.

Device Driver Installation

The Netfinity Advanced System Management PCI Adapter uses the same device drivers that are used by the Advanced System Management Processor, included with your server. Device drivers for this system management subsystem should have been installed on your server during system setup. If your Advanced System Management Processor is currently working properly, no additional device driver installation should be necessary.

If your Advanced System Management Processor is not functioning properly or you do not have the correct device drivers installed on your system, please use the copy of ServerGuide that is included with your server to install the device drivers or obtain the latest versions of the Advanced System Management Processor device drivers from the IBM support website at

`http://www.pc.ibm.com/us/`

When you reach the web site, select IBM Server Support to reach the Server Support page.

For more information on your Advanced System Management Processor, see the *Advanced System Management* section of your server library.

Setting Up and Using Your Advanced System Management Interconnect Network

This chapter includes information on how to configure and connect your system to function within an Advanced System Management (ASM) Interconnect network. Your ASM Interconnect network can include as many as 12 individual ASM connections in a single bus. Once your systems are connected they use the ASM Interconnect network to share Advanced System Management information and resources. By connecting your Advanced System Management Processors and Advanced System Management PCI Adapters to an ASM Interconnect network, you can:

- Connect the Advanced System Management Processors and Advanced System Management PCI Adapters of up to 12 servers to a single ASM Interconnect bus.

- Share Advanced System Management resources, information, and alerts between multiple systems without having to add additional communications hardware or network interface adapters.

- Use an Advanced System Management PCI Adapter that is connected to your ASM Interconnect bus as an Ethernet or Token Ring gateway for your ASM Interconnect bus, enabling all Advanced System Management information generated by servers attached to the ASM Interconnect bus to be forwarded to other systems on your Ethernet or Token Ring network.

  Note: To connect your Advanced System Management PCI Adapter to a Token Ring network you must purchase and install the IBM Netfinity Advanced System Management Token Ring Option (PN 36L9654). To purchase this option, please contact your IBM Authorized reseller.

To connect other systems to the ASM Interconnect network bus, you need an Advanced System Management Interconnect Cable Option (PN 03K9309). To purchase this option, please contact your IBM Authorized reseller.

Once you have installed the Advanced System Management Interconnect Cable option on each of the systems that will be connected to the ASM Interconnect network bus, you need to connect the systems together using standard Ethernet cable. When connecting your systems, be aware of the following setup and configuration considerations:

- The ASM Interconnect network must be set up as a bus, not as a ring. Make sure your servers are connected to the ASM Interconnect network in series, with a beginning point and an end point.

- The total length of all Ethernet cables connecting the systems in the ASM Interconnect network should not exceed 300 feet.

- Each Advanced System management PCI Adapter or Advanced System Management Processor that is connected to the ASM Interconnect network bus counts as 1 connection. For example, if you have installed an Advanced System Management PCI Adapter option in a system that has an Advanced System Management Processor, the Processor and the Adapter are connected to each other using an ASM Interconnect connection and each count as a connection on the ASM Interconnect network bus.

Advanced System Management Interconnect Alert Forwarding

Advanced System Management PCI Adapters and Advanced System Management Processors that are connected to an ASM Interconnect network share resources and system management information. This section provides infomration on how alerts are shared and forwarded in the ASM Interconnect network.

During normal operation, each Advanced System Management Processor or PCI Adapter on the ASM Interconnect network communicates with the other processors and adapters on the network. Processors or adapters that have a modem, Ethernet, or Token Ring connection "tell" the other processors and adapters that these communications resources are available for use by other systems on the ASM Interconnect network. These communications resources can now be used as ASM Interconnect network resources, enabling any Advanced System Management Processor or PCI Adapter on the ASM Interconnect netowrk to send alerts to a modem or an IP address, even if they do not have a modem or network connection physically attached.

As they generate alerts, the alerts are forwarded to the Advanced System Management Processor or PCI Adapter on the ASM Interconnect network that has the communications resources necessary to forward the alert. If no system on the ASM Interconnect network meets the requirements, the alert is not forwarded and is discarded.

If multiple modems or multiple network connections exist in the ASM Interconnect network, you cannot specify which system will receive an alert or which will use its modem or network connection to forwarded the alert. If an alert is forwarded to another Advanced System Management Processor or PCI Adapter that is unable to deliver the alert (for example, the modem it is configured to use has failed or the netowrk cannot resolve the destination IP address), the processor or adapter will attempt to forward the alert, to another system on the ASM Interconnect network that has the resources necessary to forward the alert as requested. If another system with the neccesary resources is not available or the alert still cannot be forward ed it is discarded.

Sample Advanced System Management Interconnect Configurations

The following illustrations present some sample ASM Interconnect network configurations that you can use. In this example, a modem has been connected to the Advanced System Management PCI Adapter that is included with a Netfinity 7000 M10 and an Advanced System Management PCI Adapter option has been installed in a Netfinity 5000. In this case, the Netfinity 5000 with the Advanced System Management PCI Adapter will act as a network gateway, forwarding system management data generated by the other systems in the ASM Interconnect network bus to system management administration system connected to the network. The Netfinity 7000 M10 has been configured to use a modem forward the system management data to the administrator as well, providing redundancy in case of network failure.
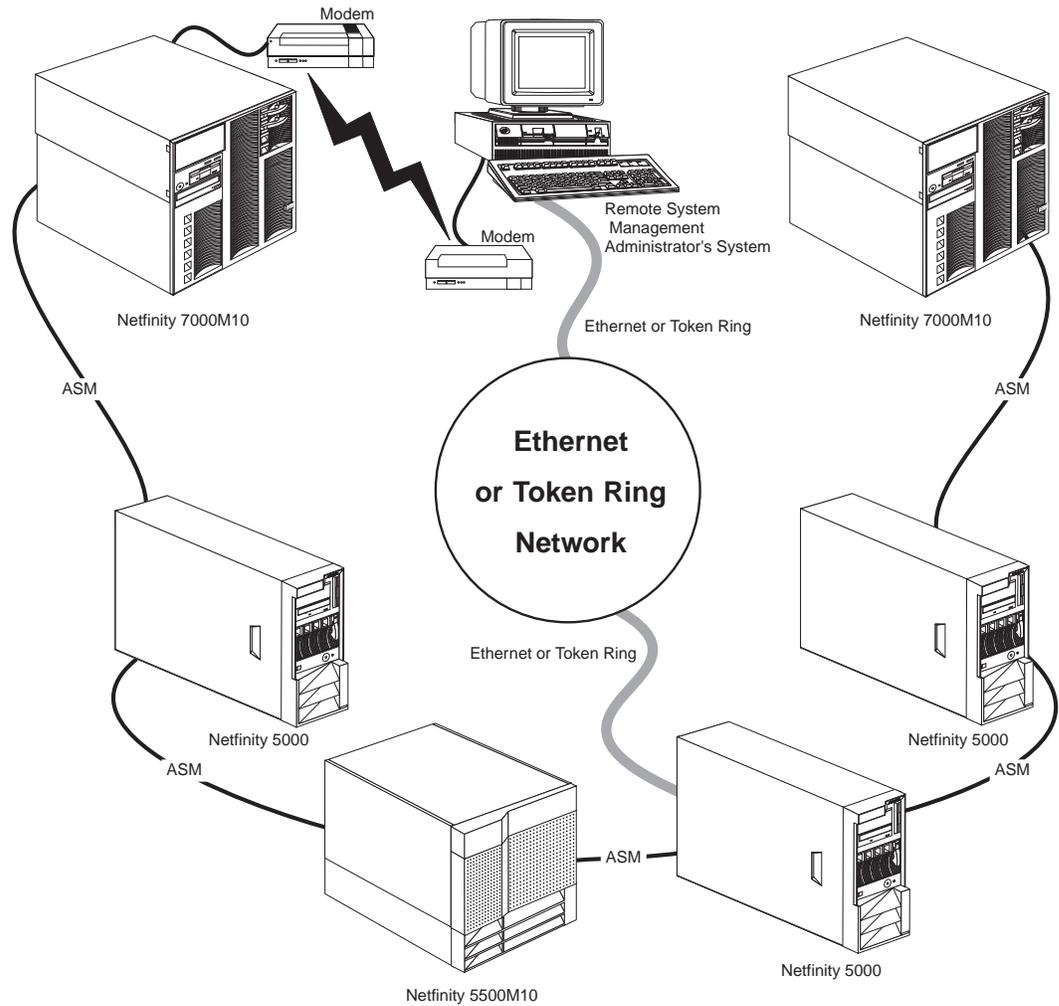
In this example, a modem has been connected to the Advanced System Management Processor in a Netfinity 5000. In this case, the Netfinity 5000 will use the modem to forward system management data generated by the other systems in the ASM Interconnect network bus to the remote system management administrator.
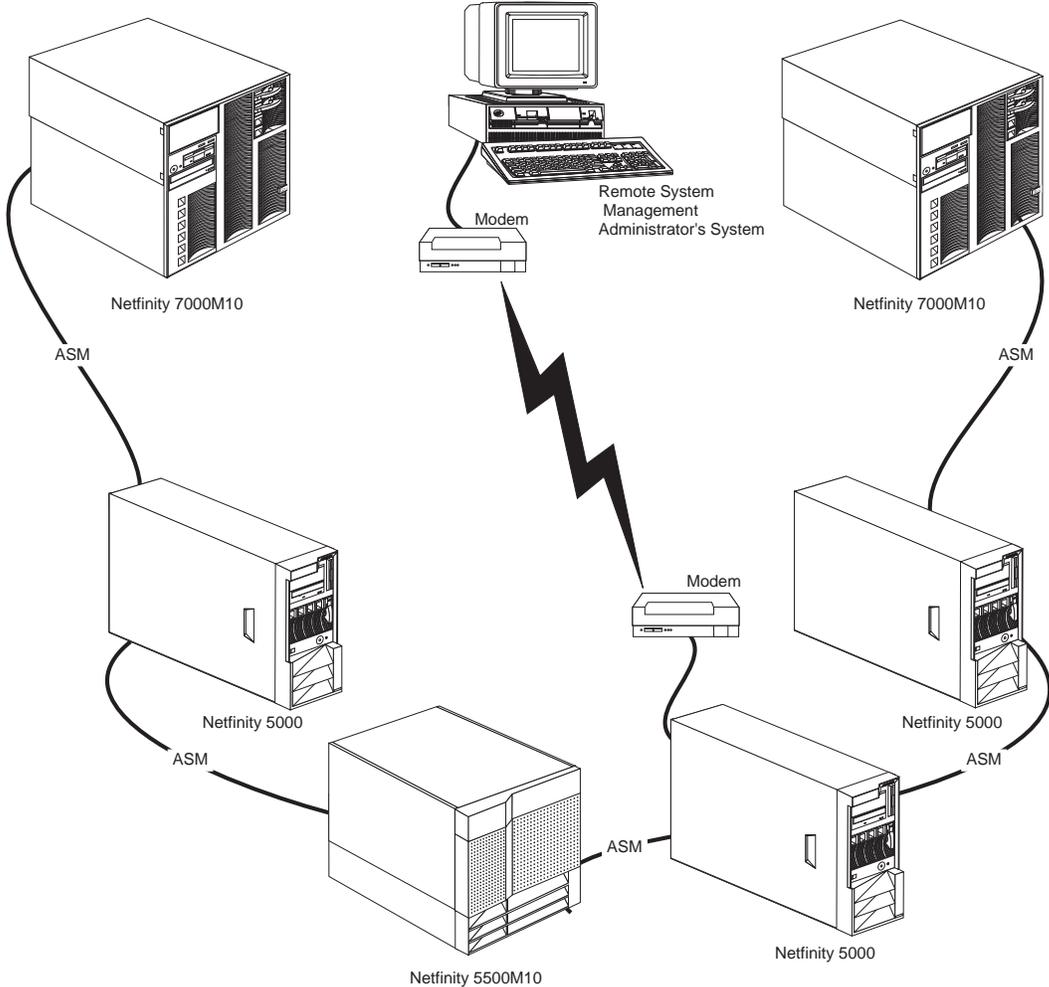
In this example, modems have been connected to the Advanced System Management PCI Adapter that is included with Netfinity 7000 M10 servers at each end of the ASM Interconnect network bus. Placing modems at opposite ends of the ASM Interconnect network bus ensures that if an ASM Interconnect connection in the bus fails all of the systems will still have access to a modem to forward system management data to the remote system administrator.

Remote System
Management
Administrator's System

Modem

Modem

Modem

Netfinity 7000M10

Netfinity 7000M10

ASM

ASM

ASM

ASM

Netfinity 5000

Netfinity 5000

ASM

Netfinity 5500M10

Netfinity 5000
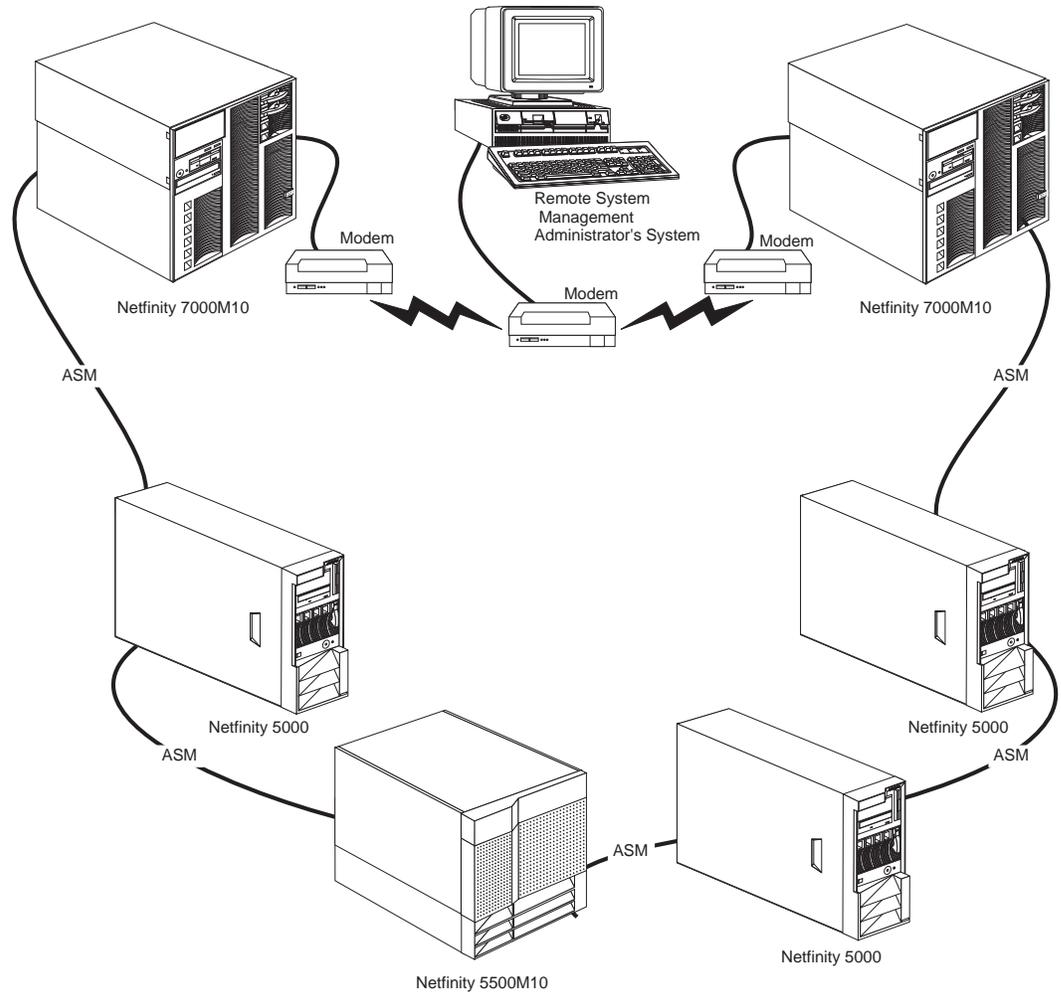
Appendix A. Advanced System Management PCI Adapter Connectors and LEDs

Refer to the following illustration for information about the connectors and LEDs on the Advanced System Management PCI Adapter.
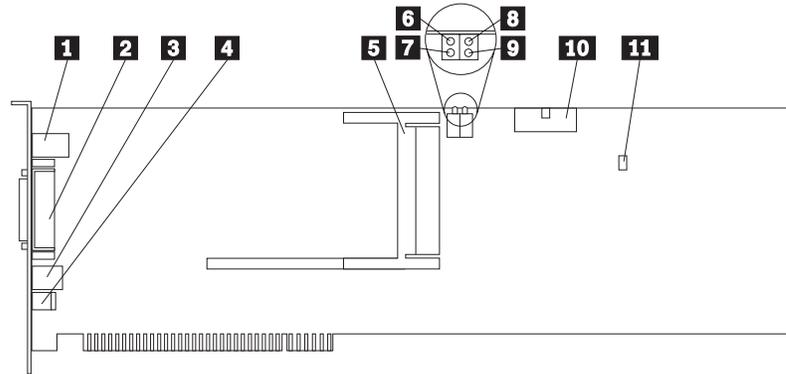
1	10/100 Ethernet port connector
2	Dual serial port connector
3	RS-485 bus connector
4	External power supply connector
5	PCMCIA Token Ring connector
6	Power on LED (CR2 bottom). Remains lit if power is being supplied to the adapter.
7	Processor error LED (CR2 top). Indicates problems with the Advanced System Management PCI Adapter processor. If lit, your adapter requires service.
8	Ethernet activity LED (CR3 bottom). Blinks when Ethernet activity is low, remains steady when activity is high. Does not indicate Token Ring or ASM Interconnect activity.
9	Ethernet link LED (CR3 top). If lit, a logic link on the Ethernet hub or network has been established. Does not indicate Token Ring or ASM Interconnect link or activity.
10	I/O function card connector
11	Reserved J9

Appendix B. Help and Service Information

During the warranty period, you can get toll-free technical support 24 hours a day, 7 days a week, to answer any questions about your adapter.[*] If you need warranty service, return or exchange is available. In addition, if your IBM options are installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Before calling, please prepare for your call by following these steps.

CAUTION:
To avoid electrical shock, unplug your computer and all attached devices from electrical outlets before performing any troubleshooting procedure.

Step 1: Troubleshooting

You might be able to solve the problem yourself. Before calling IBM, you might want to try the following troubleshooting procedures.

1. Remove and reattach all adapter cables.

2. Remove the adapter.

3. Inspect the adapter for damage.

4. Reinstall the adapter.

5. Place the adapter in a different slot, if possible.

6. Inspect the RJ-11 connectors on the back of the Advanced System Management Adapter. Make sure that all plugs are inserted into the RJ-11 connectors properly.

7. Check the system documentation for instructions about the installation of options. Look for a section about system setup or system configuration. Follow all procedures.

8. After completing these steps, reassemble the system, connect the power cord, and retry the failing operation.

Step 2: Preparing for the Call

To assist the technical support representative, have available as much of the following information as possible:

1. Option name, description, and serial number (if any)

2. Proof of purchase

3. Computer manufacturer, model, serial number, and manual

4. Exact wording of the error message (if any)

5. Description of the problem

6. Hardware and software configuration information for your system

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[*] Response time will vary depending on the number and nature of calls received.

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

Step 3: Placing the Call to IBM

Use one of the following numbers:

- Within the United States, call 1-800-772-2227

- Within Canada, call 1-800-565-3344

- Outside the United States and Canada, contact your IBM reseller, IBM marketing representative, or your place of purchase.

Appendix C. Product Warranties and Notices

Warranty Statements

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

- **United States, Puerto Rico, and Canada (Z125-4753-05 11/97)**
  (Part 1 - General Terms on page 20)
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)**
  (Part 1 - General Terms on page 22)
- **Worldwide Country-Unique Terms**
  (Part 2 - Country-Unique Terms on page 24)

IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (Part 1 - General Terms)

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

Machine -   IBM Netfinity Advanced Systems Management PCI Adapter

Warranty Period* -   Three Years

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

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

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

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

Extent of Warranty
The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

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

Items Not Covered by Warranty

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

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

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

Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. In the United States, call IBM at 1-800-772-2227. In Canada, call IBM at 1-800-565-3344. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

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

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

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

You also agree to

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

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

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

Production Status

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

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages, up to the greater of U.S. $100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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

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

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

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

Machine - IBM Netfinity Advanced Systems Management PCI Adapter

Warranty Period* - Three Years

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

The IBM Warranty for Machines

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

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

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

Extent of Warranty

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

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

Items Not Covered by Warranty

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Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

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

You also agree to

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

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

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

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

Limitation of Liability
Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages, up to the greater of U.S. $100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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

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

Part 2 - Worldwide Country-Unique Terms

ASIA PACIFIC

AUSTRALIA: The IBM Warranty for Machines: The following paragraph is added to this Section:
The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

Extent of Warranty: The following replaces the first and second sentences of this Section:
The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

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

PEOPLE'S REPUBLIC OF CHINA: Governing Law: The following is added to this Statement:
The laws of the State of New York govern this Statement.

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

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

Limitation of Liability: The following is added to this Section:
Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

<u>**EUROPE, MIDDLE EAST, AFRICA (EMEA)**</u>

The following terms apply to all EMEA countries.

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

Warranty Service
If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

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

The following terms apply to the country specified:

EGYPT: Limitation of Liability: The following replaces item 2 in this Section:
2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

FRANCE: Limitation of Liability: The following replaces the second sentence of the first paragraph of this Section:
In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

GERMANY: The IBM Warranty for Machines: The following replaces the first sentence of the first paragraph of this Section:
The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:
The minimum warranty period for Machines is six months.

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

Extent of Warranty: The second paragraph does not apply.

Warranty Service: The following is added to this Section:
During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Production Status: The following paragraph replaces this Section:

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

Limitation of Liability: The following is added to this Section:
The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

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

The following sentence is added to the end of the first paragraph of item 2:
IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

IRELAND: Extent of Warranty: The following is added to this Section:
Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: The following replaces items one and two of the first paragraph of this Section:
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section:
IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY: Limitation of Liability: The following replaces the second sentence in the first paragraph:
In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2)as to any other actual damage arising in all situations involving non-performance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

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

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND: Limitation of Liability: The following is added to this Section:
IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

TURKIYE: Production Status: The following replaces this Section:
IBM fulfils customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

UNITED KINGDOM: Limitation of Liability: The following replaces items 1 and 2 of the first paragraph of this Section:
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling 150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph:
3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section:
IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.

NORTH AMERICA

CANADA: Warranty Service: The following is added to this Section:
To obtain warranty service from IBM, call **1-800-465-6666**.

UNITED STATES OF AMERICA: Warranty Service: The following is added to this Section:
To obtain warranty service from IBM, call **1-800-IBM-SERV**.

Notices

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

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Microsoft, Windows, the Windows NT are trademarks or registered trademarks of Microsoft Corporation.

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

Electronic Emissions

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.

IBM is not responsible for any radio or television interference caused 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 conform à la norme NMB-003 du Canada.

Japanese Voluntary Control Council for Interference (VCCI) Statement

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