



xSeries 135

Installation Guide

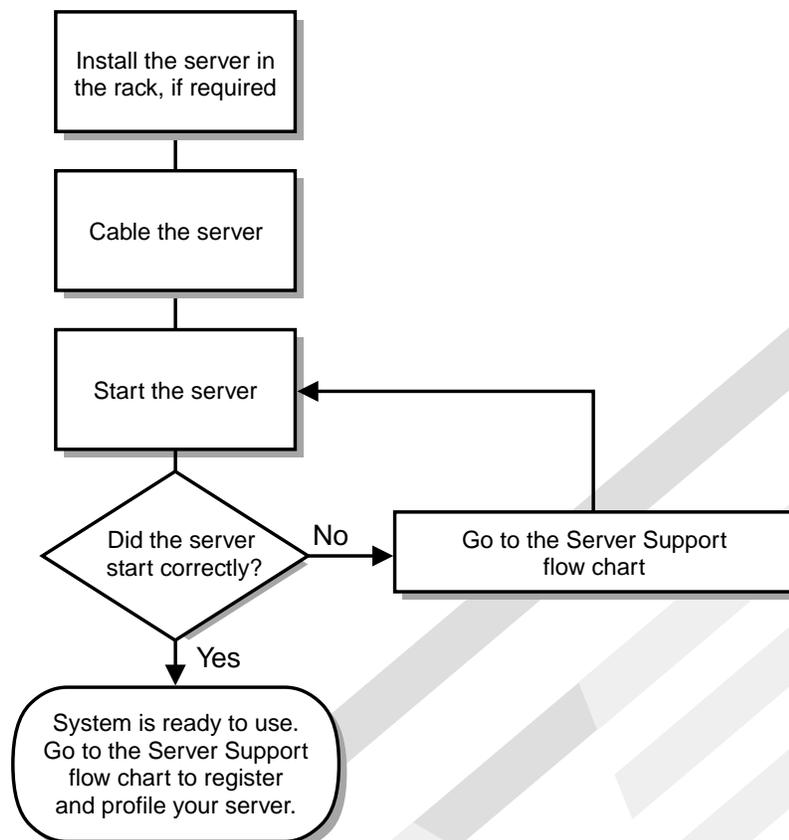
Welcome...

Thank you for buying an IBM xSeries appliance server.

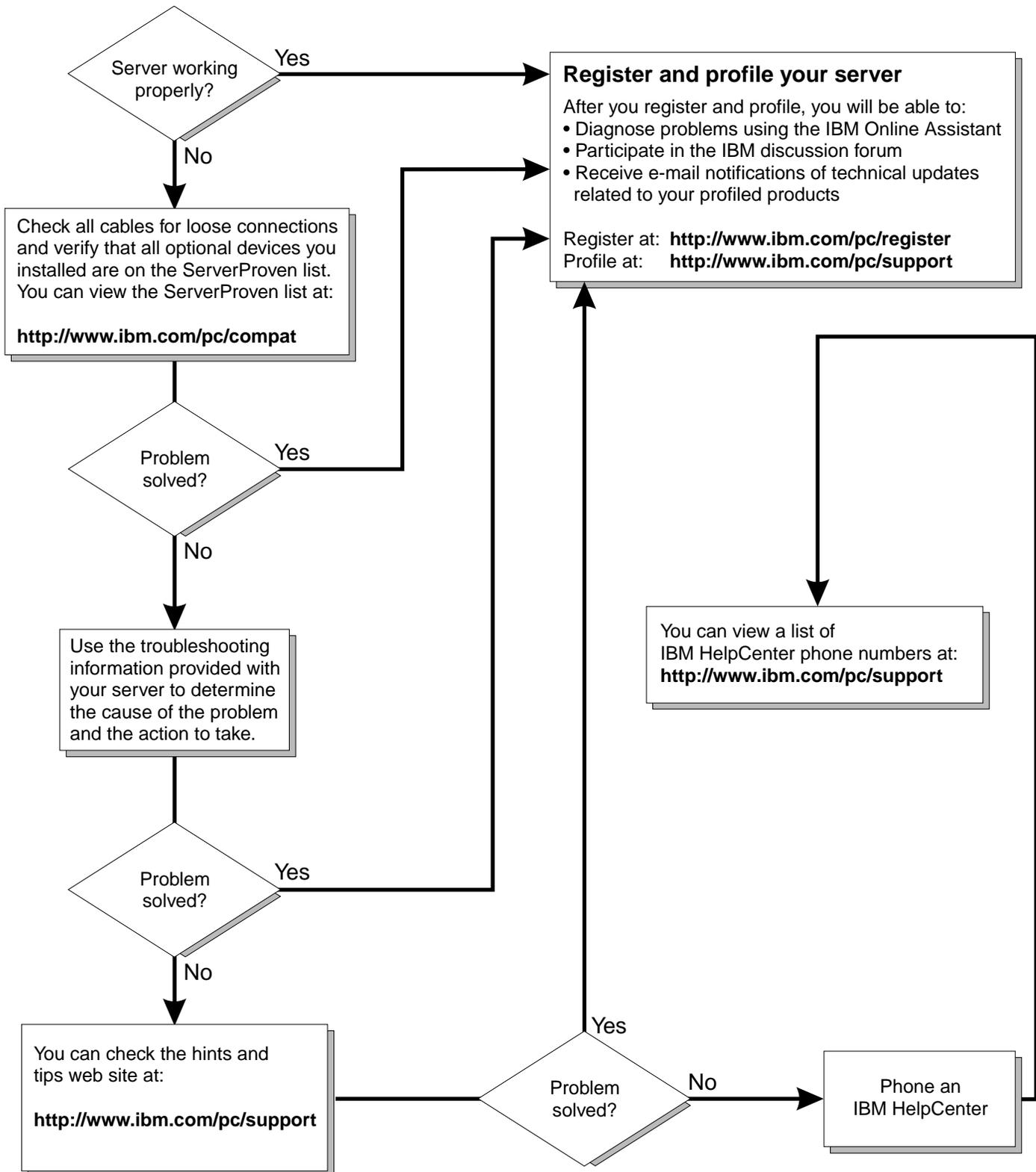
This server *Installation Guide* contains information for setting up and configuring your appliance server.

For detailed information about your appliance server, view the *User's Reference* on the Documentation CD.

You also can find the most current information about your server on the IBM Web site at: <http://www.ibm.com/pc/support>



Server Support



IBM xSeries 135 Appliance Server



Installation Guide

Before using this information and the product it supports, be sure to read the general information in “Appendix A. Product warranties and notices,” on page 31.

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Safety Information

Before installing this product, read the Safety Information book.

مج، يجب قراءة دات السلامة

Antes de instalar este produto, leia o Manual de Informações sobre Segurança.

安装本产品前请先阅读《安全信息》手册。

Prije instalacije ovog proizvoda pročitajte priručnik sa sigurnosnim uputama.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs hæftet med sikkerhedsforskrifter, før du installerer dette produkt.

Lue Safety Information -kirjanen, ennen kuin asennat tämän tuotteen.

Avant de procéder à l'installation de ce produit, lisez le manuel Safety Information.

Vor Beginn der Installation die Broschüre mit Sicherheitshinweisen lesen.

Πριν εγκαταστήσετε αυτό το προϊόν, διαβάστε το εγχειρίδιο Safety Information.

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

Przed zainstalowaniem tego produktu należy przeczytać broszurę Informacje Dotyczące Bezpieczeństwa.

Prima di installare questo prodotto, leggere l'opuscolo contenente le informazioni sulla sicurezza.

本製品を導入する前に、安全情報資料を御読みください。

이 제품을 설치하기 전에, 안전 정보 책자를 읽어보십시오.

Пред да го инсталирате овој производ прочитајте ја книгата со безбедносни информации.

Lees voordat u dit product installeert eerst het boekje met veiligheidsvoorschriften.

Les heftet om sikkerhetsinformasjon (Safety Information) før du installerer dette produktet.

Prije instalacije ovog proizvoda pročitajte priručnik sa sigurnosnim uputama.

Antes de instalar este produto, leia o folheto Informações sobre Segurança.

Перед установкой продукта прочтите брошюру по технике безопасности (Safety Information).

Pred inštaláciou tohto produktu si pre ítajte Informa nú brožúrku o bezpe nosti.

Preden namestite ta izdelek, preberite knjižico Varnostne informacije.

Antes de instalar este producto, lea la Información de Seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

在安裝本產品之前，也請先閱讀「安全性資訊」小冊子。

Installálás el tt olvassa el a Biztonsági el írások kézikönyvét !

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Chapter 1. Introduction

The IBM® eServer xSeries 135 appliance server consists of hardware, software, and a system management program. The hardware can be mounted in your existing rack and connected to your existing network.

Management of users, system access, and the appliance is accomplished through Appliance System Manager, a Web-based appliance administration application program. Users can use file transfer protocol (FTP) to store Web page files on the appliance.

The IBM xSeries 135 appliance server has the following preinstalled components:

- TurboLinux Server 6.05 operating system
- Base system software
- Appliance System Manager software
- IBM HTTP Server®
- IBM Advanced Application Configuration Utility

Included with the IBM xSeries 135 appliance server are software CDs that you can use to reinstall the operating system and preinstalled application programs.

Also included is an *IBM xSeries Documentation* CD, which provides detailed information about your appliance server.

If you have access to the World Wide Web, you can obtain up-to-date information about your IBM xSeries 135 appliance server and other IBM server products at the following World Wide Web address:

<http://www.ibm.com/eserver/xseries/>

Record your product information in this table.

Product name	_____
Machine type	_____
Model number	_____
Serial number	_____

The server serial number is located on labels on the top front edge of the server.

What is included with the appliance server

The appliance server package comes with the following items:

- Hardware:
 - One IBM xSeries 135 appliance server, a rack-mounted enterprise-class appliance for high-volume network Web page storage
 - One rack-mounting kit for mounting the appliance in your existing rack
 - Two slide-rail assemblies
 - One bag of nuts and screws
 - One IEC power cord to connect the appliance to your existing properly grounded power distribution unit
 - One C2T device breakout cable
- Software and documentation
 - One *Supplementary* CD, containing the IBM Advanced Application Configuration Utility, diskette tools to create a recovery enablement diskette, and source code
 - One *Documentation* CD that includes the appliance documentation
 - One *Recovery* CD
 - This book, the *IBM xSeries 135 Installation Guide*, to help you install and configure the appliance server
 - Warranty and license information
 - Proof of license

Features and specifications

Table 1 provides a summary of the features and specifications for your IBM xSeries 135 appliance server.

Table 1. Features and Specifications

<p>Microprocessor:</p> <ul style="list-style-type: none"> • Intel® Pentium® III microprocessor with MMX™ technology and SIMD extensions • 256 KB level-2 cache (min.) <p>Memory:</p> <ul style="list-style-type: none"> • Standard: 256 MB (min.) • Type: 133 MHz, ECC, SDRAM, registered DIMMs • Slots: 4 dual in-line slots <p>Drives standard:</p> <ul style="list-style-type: none"> • One LVD hard disk drive • Diskette: 1.44 MB • CD-ROM: 40X IDE <p>PCI slots:</p> <p>Two 33 MHz, 64-bit</p> <p>Power supply:</p> <p>One 200 watt (115-230 V ac)</p> <p>Video:</p> <ul style="list-style-type: none"> • S3 video controller (integrated on system board) • Compatible with SVGA • 8 MB SDRAM video memory 	<p>Size</p> <ul style="list-style-type: none"> • Height: 43.69 mm (1.72 in.) • Depth: 653.29 mm (25.72 in.) • Width: 439.93 mm (17.32 in.) • Weight: approximately 12.7 kg (28 lb) when fully configured <p>Integrated functions:</p> <ul style="list-style-type: none"> • One Ultra160 SCSI controller • Two 10BASE-T/100BASE-TX Intel Ethernet controllers • One serial port • One parallel port • Two Universal Serial Bus (USB) ports • Two console ports (one in, one out) <p>Acoustical noise emissions:</p> <ul style="list-style-type: none"> • Sound power, idling: 6.1 bel maximum • Sound power, operating: 6.2 bel maximum <p>Environment:</p> <ul style="list-style-type: none"> • Air temperature: <ul style="list-style-type: none"> — Server on: 10° to 35° C (50.0° to 95.0° F). Altitude: 0 to 914 m (2998.7 ft) — Server on: 10° to 32° C (50.0° to 89.6° F). Altitude: 914 m (2998.7 ft.) to 2133 m (6998.0 ft) — Server off: 10° to 43° C (50.0° to 109.4° F). Maximum altitude: 2133 m (6998.0 ft) • Humidity: <ul style="list-style-type: none"> — Server on: 8% to 80% — Server off: 8% to 80% 	<p>Heat output:</p> <p>Approximate heat output in British thermal units (BTU) per hour</p> <ul style="list-style-type: none"> • Minimum configuration: 273 BTU (80 watts) • Maximum configuration: 751 BTU (220 watts) <p>Electrical input:</p> <ul style="list-style-type: none"> • Sine-wave input (50-60 Hz) required • Input voltage low range: <ul style="list-style-type: none"> — Minimum: 100 V ac — Maximum: 127 V ac • Input voltage high range: <ul style="list-style-type: none"> — Minimum: 200 V ac — Maximum: 240 V ac • Input kilovolt-amperes (kVA) approximately: <ul style="list-style-type: none"> — Minimum: 0.08 kVA — Maximum: 0.22 kVA
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Notices used in this book

This information product contains notices that relate to a specific topic. The Caution and Danger notices also appear in the multilingual safety book provided on the *Documentation* CD. Each notice is numbered for easy reference to the corresponding notices in the safety booklet.

The notice definitions are as follows:

- **Notes:** 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 notices indicate situations that can be potentially hazardous to you. A caution notice is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These notices indicate situations that can be potentially lethal or extremely hazardous to you. A danger notice is placed just before descriptions of potentially lethal or extremely hazardous procedure step or situation.

Chapter 2. Installing and cabling the appliance server

Installing the IBM xSeries 135 appliance server consists of the following general tasks:

1. “Setting up the hardware”.
2. “Connecting the server to the network”.
3. “Setting the initial Internet protocol (IP) address” on page 6.

Setting up the hardware

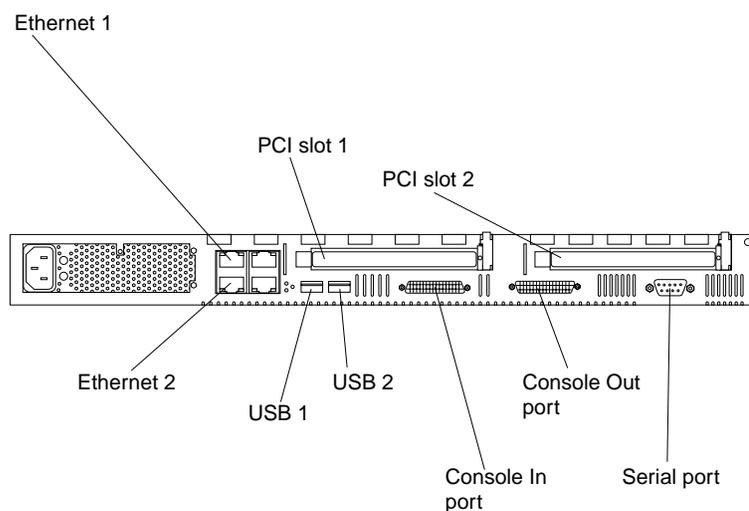
To set up the hardware, mount the appliance server in your rack, connect the appliance to your network, and then turn on the power to the appliance.

For instructions to install the IBM xSeries 135 appliance server in a rack, see the *IBM xSeries 135 Appliance Server Quick Setup Guide*.

You will not need to connect a mouse or keyboard cable when cabling your appliance server. You will need to connect only the power cable and network cables.

Input/Output (I/O) connectors

Refer to the following illustration to locate the connectors on the back of your server.



Connecting the server to the network

The IBM xSeries 135 appliance server has two Ethernet connectors that you can use to integrate the appliance server to an existing local area network (LAN). You can use one or both Ethernet ports, but some software features can function properly only if the server is connected to the local area network (LAN) through Ethernet port 1. Connect a Category 5 Ethernet cable to the server Ethernet port 1 and to a LAN hub or switch to connect the appliance server to an existing network.

Note: If you plan to use the IBM Advanced Appliance Configuration Utility to configure and manage your appliance, be sure to connect the built-in Ethernet

connector to the same physical network as your systems management console.

Using the C2T device breakout cable

You might need to connect a monitor, keyboard, and pointing device to the IBM xSeries 135 appliance server for direct access or for recovery of the operating system. To do this, you must connect the device breakout cable that is provided to the Console Out port. To find the location of the Console Out port, see “Input/Output (I/O) connectors” on page 5.

Cable management

Use the cable ties and hook-and-loop straps that are supplied with your server to secure the cables.

Note: Do not secure cables too tightly. Over-tightening can cause internal damage to cables.

Setting the initial Internet protocol (IP) address

You must set the initial IP address for the appliance server before you can perform any other configuration procedure for the appliance. Be sure that you set the initial IP address for only one appliance at a time on the physical network.

Note: Before you logon, make sure that you have a valid IP address, net mask, host name, domain name, gateway, and primary DNS server address for the appliance to use in your IP network. If you do not have this information, contact your network administrator.

There are four methods that you can use to set the initial IP address. These methods are:

- Using Appliance System Manager. See “Setting the initial IP address using Appliance System Manager” for instructions.
- Using the command line if a locally attached browser is not available. See “Setting the initial IP address in a command line” on page 7 for instructions.
- Using the IBM Advanced Appliance Configuration Utility. See “Setting the initial IP address using the IBM Advanced Appliance Configuration Utility” on page 8 for instructions.
- Using a diskette to set the initial IP address. See “Setting the initial IP address using a diskette” on page 8 for instructions.

Setting the initial IP address using Appliance System Manager

To set the initial IP address for the appliance server using Appliance System Manager, do the following:

1. Open a browser on a computer that is attached to the same physical network as the appliance.
2. Disable the proxy settings for the browser.
3. Go to `http://appliance_IP_address:3939` where *appliance_IP_address* is the IP address that you want to assign the appliance.
4. Type user ID administrator and password password.

Notes:

- a. The **user name** and **password** fields are case sensitive.
 - b. The user name and password are different from the root user.
5. Click **Next**.
6. In the **ASM Configuration** window, change the password for the root user.
- a. Type a new password.
 - b. Type the password again.
 - c. Click **Next**. The ASM Configuration-Set Networking Parameters window appears. Type the information for the following required fields and then click **Next**:
 - Host Name
 - Domain Name
 - Gateway
 - IP Address (the IP address is already displayed, but you can change it to a different address)
 - Netmask
 - Primary DNS Server (optional)
 - d. Click **Next** to make the changes take effect. A Machine rebooting message appears. If the page does not load by itself in five minutes, click **Refresh**.
7. When prompted, type user name administrator and password password. In the ASM Main Page, you can now perform additional configuration tasks.
8. Create HTML files for your Web site on your own computer. See “Putting the initial Web page on the appliance” on page 16 for more information.
- a. Use a file transfer protocol (FTP) command or program to store the file on the appliance server hard disk drive using userid webroot and password password. See the documentation that applies to the FTP tool that you are using for detailed instructions.
 - b. Name the file index.html.
9. Go to `http://appliance_IP_address` to verify your IP address and to view your new Web page.

See the *Appliance System Manager Administration Guide* for information about additional configuration tasks.

Setting the initial IP address in a command line

A command line script is provided if a locally attached browser is not accessible. To use this method of assigning the initial IP address, do the following:

1. Turn off the appliance server.
2. Attach a C2T device breakout cable to the appliance server Out connector. See “Using the C2T device breakout cable” on page 6 for details.
3. Attach a keyboard, mouse, and monitor to the C2T device breakout cable, or attach a serial terminal (VT100) to the serial port.
4. Turn on the appliance server.
5. Log in to the appliance server as the user root with the password password.
6. Type `/opt/CSM/scripts/setup.pl` and press Enter.
7. Respond to the questions as prompted.
8. Type `Y` and press Enter to restart the appliance when prompted.

Setting the initial IP address using the IBM Advanced Appliance Configuration Utility

To set the initial IP address using the IBM Advanced Appliance Configuration Utility, do the following:

1. Configure the IBM Advanced Appliance Configuration Utility with a family covering the newly deployed appliance. See “IBM Advanced Appliance Configuration Utility” on page 16.
2. Start the IBM Advanced Appliance Configuration Utility with the configuration and deploy the new appliance in the same subnet (the IBM Advanced Appliance Configuration Utility does not work outside of the subnet of the appliance).
3. Select the appliance in the left pane and click **Start Web Management**. An initial configuration page opens.
4. Complete the initial configuration of the appliance using the wizard. The appliance server restarts.

Setting the initial IP address using a diskette

To set the initial IP address using a diskette, do the following:

1. Format a diskette using a computer running DOS or Microsoft® Windows®, or create a DOS file system on the diskette if using some other computer.
2. Create a file in the root directory of the diskette called `initsys.ini` with an initial configuration file containing the new IP address of the appliance.

The diskette can contain the following information:

- Initial IP address
- Host name of the appliance
- IP address of gateway device (default route)
- Network mask
- IP address of primary DNS name server
- System password

The following is an example configuration file:

```
IPAddress=10.1.1.1
Subnet=255.255.255.0
GatewayAddress=9.27.67.1
```

The configuration file contains only 7-bit standard ASCII characters. Lines beginning with # are treated as comments. All white space is ignored. Keywords can appear in any order, and the keyword names are case-sensitive.

The following keywords are available:

Keyword	Purpose	Default value
IPAddress	Initial IP address	
NetworkMask	Network mask	
HostName	Fully-qualified host name	
GatewayAddress	IP address of gateway device	
NameServerAddress	IP address of primary DNS name server	
Password	System password	existing system password

Notes:

- a. The only required parameter in the initial configuration file is the initial IP address. The system password parameter default is password.
 - b. If any parameters other than the initial IP address are not specified, the administrator must use the initial configuration wizard that is provided by the Appliance System Manager to complete the initial configuration of the appliance. Any values that are supplied in the file are automatically filled in by the wizard, so that you do not have to type them again.
3. Insert the diskette into the appliance and turn on the appliance.

Note: The diskette must be in the appliance when the appliance starts for the contents of the diskette to be read.

Changing default passwords

Passwords on new appliances are set to password. To change the passwords, do the following:

- If the root password has not been changed in the initial configuration page, click **Security/System Password** in Appliance System Manager, and change the password.
- The default user is webroot with a password of password. Click **Security/Manage Users** in Appliance System Manager, and change the default user password.
- The default Appliance System Manager administrator ID is administrator with a password of password. Click **Security/Manage Administrators/Edit Administrator** in Appliance System Manager, and change the administrator user password.

For greater security, create an Appliance System Manager administrator with a different user ID and password. Then, delete the original administrator user ID.

Important

Do not delete the original administrator ID until you have created a new administrator ID that is valid.

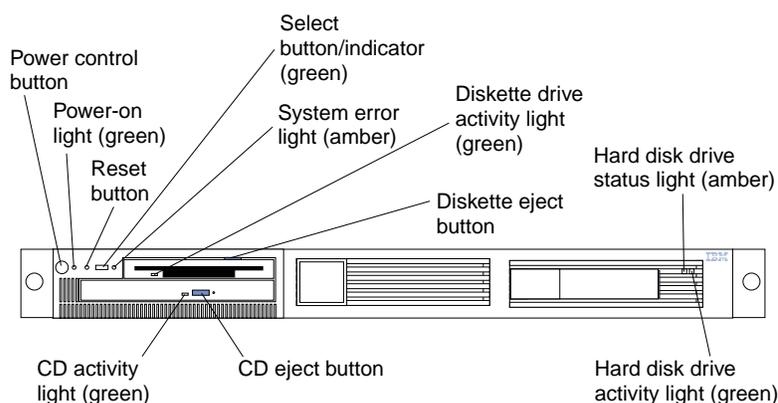
Chapter 3. Starting the server

This chapter contains information to help you identify the controls and indicators on the IBM xSeries 135 appliance server and instructions for turning the appliance server on and off.

Server controls and indicators

This section identifies the controls and indicators on the front and the back of your server.

Front view



Power control button: Press this button to manually turn the server on or off.

Power-on light: This green LED lights and stays on when you turn on your server and blinks when the server is in standby mode.

Reset button: Press this button to reset the server and run the power-on self-test (POST). You might need to use a pen or the end of a straightened paper clip to press the button.

Select button/indicator: The green LED on this button lights when the monitor, keyboard, and mouse are logically connected to this server.

System error light: This amber LED lights when a system error occurs.

Diskette drive activity light: When this LED is on, it indicates that the diskette drive is in use.

Diskette eject button: Push this button to release a diskette from the drive.

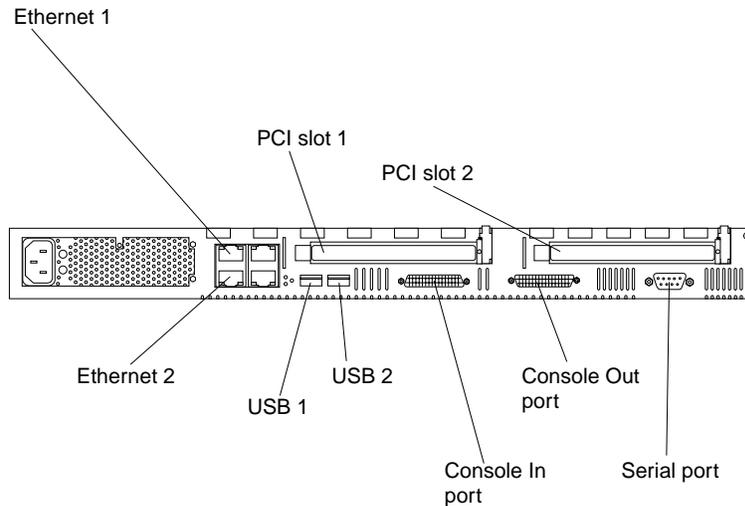
Hard disk drive status light: Each of the hot-swap drives has a hard disk drive status light. When this amber LED is on continuously, the drive has failed.

Hard disk drive activity light: Each of the hot-swap drives has a hard disk drive activity light. When this green LED is flashing, the controller is accessing the drive.

CD eject button: Push this button to release a CD from the drive.

CD drive activity light: When this light is on, it indicates that the CD-ROM drive is in use.

Rear view



Ethernet 1: Category 5 Ethernet cable can be plugged in to Ethernet port 1 to connect the appliance server to an existing local area network (LAN).

PCI slot 1 and PCI slot 2: PCI adapters can be installed in these slots.

Serial port: Signal cables for modems or other serial devices connect to the 9-pin serial port connector.

Console Out port: This port is used to connect the server to a keyboard, monitor, and pointing device. It is also used to connect multiple servers together to share a single keyboard, monitor, and pointing device.

Console In port: This port is used to connect multiple servers together to share a single keyboard, monitor, and pointing device.

Note: Connecting multiple servers together to share input/output devices is not supported.

USB 1 and USB 2: Signal cables for Universal Serial Bus (USB) devices can be connected to the USB connector.

Note: The addition of USB devices is not supported.

Ethernet 2: Category 5 Ethernet cable can be plugged in to Ethernet port 1 to connect the appliance server to an existing local area network (LAN).

Turning on the server

Complete the following steps to turn on the server:

1. Plug the power cord of your server into the power source.

Note: Plugging the power cord into a power source might cause the server to start automatically. This is an acceptable action.

2. Wait 30 seconds, and then press the power control button on the front of the server.

Important

The first time you start your server, a series of configuration and system preparation programs that finish configuring the NOS are run automatically. These programs must finish running before you use any included applications (such as the IBM Advanced Application Configuration Utility) to connect to or to configure your IBM xSeries 135 appliance server. Do not connect to or configure the IBM xSeries 135 appliance server for at least five minutes after the initial system start. This notice applies only to the first time the IBM xSeries 135 appliance server is started.

Turning off the server

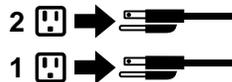
Complete the following steps to turn off the server:

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.



1. See your operating system documentation for the proper procedure to shut down the operating system.

Note: Each operating system is different. Some allow an immediate shutdown; others require an orderly procedure.

2. Use Appliance System Manager to shutdown the server. See the *Appliance System Manager Administrator's Guide*.
3. Disconnect the server from the power source.

Note: After you turn off the server, wait at least 5 seconds before you turn on the server again.

Chapter 4. Appliance configuration programs

Your IBM xSeries 135 comes with programs that you can use to configure, manage, and maintain your appliance server. These configuration programs include:

- **Appliance System Manager**

Appliance System Manager enables the creation of software administrative services that enable the delivery of solutions in a remotely managed, unattended, closed hardware server. The main functions of this software are as follows:

 - The ability to remotely manage the appliance through the World Wide Web
 - Web server
 - Encryption software for use by the web server (for HTTP-S sessions)
 - Software services for discovering and configuring new appliances (IBM Advanced Appliance Configuration Utility)
- **IBM Advanced Appliance Configuration Utility**

The Advanced Appliance Configuration Utility aids in setting up and reconfiguring the network configuration on your appliance server. The Advanced Appliance Configuration Utility agent, preinstalled on your IBM xSeries appliance, works with the Advanced Appliance Configuration Utility console to automatically detect the presence of appliances on the network. When the appliance server is detected by the Advanced Appliance Configuration Utility console, use the Advanced Appliance Configuration Utility to set up and manage the network configuration of the appliance network configuration, including assigning the IP address, default gateway, network mask, and DNS server to be used by the appliance.

Information about each of these appliance configuration programs follows.

Accessing Appliance System Manager

Appliance System Manager is a program that you can use to configure and manage the resources of the IBM xSeries 135 appliance server. For more information about this application program, see the *Appliance System Manager Administration Guide*.

Appliance System Manager is accessed through a Web browser on a computer that has network access to the appliance server. A system administrator can use Appliance System Manager to change system settings and other configuration settings for the appliance.

To access Appliance System Manager, do the following:

1. Open a browser on a computer that has network access to the appliance server.
2. Go to `https://appliance_IP_address:1999` where `appliance_IP_address` is the IP address of the appliance. The appliance main page appears.
3. Click **Administration**.
4. Click **Appliance**.
5. Accept the new site certificate when prompted.
6. When prompted, type `administrator` for the user name and password for the password. In the ASM Main Page, you can perform configuration tasks. See the

Appliance System Manager Administration Guide for more information about configuring the appliance.

Putting the initial Web page on the appliance

Do the following to change the home Web page of the appliance:

1. Create a new HTML file on another computer.
2. Use a file transfer protocol (FTP) command or program to store the file on the appliance server hard disk drive using userid webroot and password password. See the documentation that applies to the FTP tool that you are using for detailed instructions.
3. Name the file index.html.

For more information about putting Web pages on the appliance, see the *Appliance System Manager Administration Guide*.

SSL certificates

When accessing Appliance System Manager using SSL (http-s), it is normal for your browser to issue a warning that the certificate of the server is not signed by a trusted authority.

Browsers issue this warning to notify you that no trusted third party has verified the identity of the server to which you are connecting.

Your communications with Appliance System Manager are still encrypted and protected from eavesdropping when you uses http-s URLs.

IBM Advanced Appliance Configuration Utility

You can use the IBM Advanced Appliance Configuration Utility to set up and reconfigure the network configuration on your xSeries appliance server. The IBM Advanced Appliance Configuration Utility agent, which is preinstalled on your IBM xSeries appliance server, works with the Advanced Appliance Configuration Utility console, a Java™-based application that is installed on a network-attached system that will be used as a systems-management console that enables automatic detection of appliance servers on the network. After the Advanced Configuration Utility console detects the appliance server, use the Advanced Appliance Configuration Utility to set up and manage the network configuration for the appliance, including assigning the IP address, default gateway, network mask, and DNS server to be used by the appliance. You also can use the Advanced Appliance Configuration Utility to start Appliance System Manager on the appliance server, enabling you to perform more advanced systems-management tasks.

Notes:

1. The Advanced Appliance Configuration configures and reports the TCP/IP settings of the first adapter on each appliance server only. The first adapter is typically the built-in Ethernet 1 controller. Be sure to connect the built-in Ethernet 1 connector to the same physical network as your systems-management console.
2. The Advanced Appliance Configuration Utility must be running to configure newly installed appliance servers automatically.
3. The system that is running the Advanced Appliance Configuration Utility console automatically maintains a copy of its database (ServerConfiguration.dat) in the Advanced Appliance Configuration Station installation directory. To remove previous configuration data, close the Advanced Appliance Configuration Utility, delete this file, and then restart the utility. This deletes all previously configured

families. However, the Advanced Appliance Configuration Utility will discover connected appliances and their network settings.

The Advanced Appliance Configuration Utility agent

After your appliance is connected to your network, the Advanced Appliance Configuration Utility agent automatically reports the appliance MAC address (of the first NIC only), serial number, and type of appliance. Furthermore, it will report the host name, primary IP address, subnet mask, primary DNS address, and primary gateway address if these are configured on the system.

The Advanced Appliance Configuration Utility agent is preinstalled on your xSeries appliance.

Note: The Advanced Appliance Configuration Utility agent periodically broadcasts the appliance server IP settings. To prevent the service from broadcasting this data periodically, stop the Advanced Appliance Configuration Utility service.

The Advanced Appliance Configuration Utility console

The Advanced Appliance Configuration Utility console is a Java application that you install on one system in your network to be used as a systems management console. For information on how to install the Advanced Appliance Configuration Utility console, see “Using the Supplementary CD” on page 24.

Note: Do not install the Advanced Appliance Configuration Utility console on more than one systems-management console.

The Advanced Appliance Configuration Utility console enables you to:

- Automatically discover appliance servers that run the Advanced Appliance Configuration Utility agent and are attached to the same physical subnet as the Advanced Appliance Configuration Utility console.

When you start the Advanced Appliance Configuration Utility console, it automatically detects all appliance servers on your physical subnet that are running the Advanced Appliance Configuration Utility agent.

- Use a simple, GUI-based application to configure the appliance servers network settings.

Use the Advanced Appliance Configuration Utility to assign IP addresses, DNS and gateway server addresses, subnet masks, host names, and more.

- Automatically group discovered appliances into function-specific families.

Appliances are added to a family based on the appliance type. Appliances running different operating systems but performing the same function appear in the same family.

- Start Appliance System Manager management console.

Launch Appliance System Manager on your appliance server and perform advanced systems management tasks on a selected appliance server with a single mouse click.

The Advanced Appliance Configuration Utility console is divided into two panes:

- The Tree View pane

The Tree View pane on the left side of the Advanced Appliance Configuration Utility console window presents a list of all discovered appliances and includes any families you have previously defined. The Tree View pane also includes groups for appliances that do not fit any of the defined families, that were not configured using the Advanced Appliance Configuration Utility, or that have IP addresses that conflict with other devices on your network. When you click any item in the Tree View, information about the item (and any items that are nested below that item in the tree view) appears in the Information pane.

- The Information pane

The Information Pane at the right side of the Advanced Appliance Configuration Utility console window displays information about the item that is currently selected in the Tree View pane. The information that appears in the Information pane varies depending on the item that is selected. For example, if you select the **All Appliances** item from the Tree View pane, the Information pane displays configuration information (IP settings, host name, serial number, and so on) about all of the xSeries appliances that have been discovered by the Advanced Appliance Configuration Utility console. However, if you select a family, the Information pane displays information about the family settings for the selected family.

The Advanced Appliance Configuration Utility console also has the following menus:

- File

Use the selections available from the File menu to import or export the Advanced Appliance Configuration Utility console configuration data, to rescan the network, or to exit from the program.

- Family

Use the selections available from the Family menu to add or delete families, or to move families up or down in the Tree View pane.

- Appliance

Use the selections available from the Appliance menu to remove a previously discovered appliance from a family or group, and to add an appliance to the first matching family in the tree view.

- Help

Use the Help menu to display product information.

Discovering IBM xSeries appliances

Any IBM xSeries appliance server that is running and is connected to the same subnet as the system running the Advanced Appliance Configuration Utility console is automatically discovered when you start the Advanced Appliance Configuration Utility console. Discovered appliances appear in the Advanced Appliance Configuration Utility console Tree View pane (in the left pane of the Advanced Appliance Configuration Utility console window). Each appliance appears in two locations in the tree view:

- In the tree view under **All Appliances**.
- In one of the following portions of the tree view:
 - In a family
If the discovered appliance fits the requirements of a family, it automatically appears as part of a family.
Note: If a discovered appliance fits the requirements of more than one family, it is automatically added to the first appropriate family that is listed in the tree view, starting from the top of the tree. For information on how to move appliances between families, see “Using families and groups in the tree view”.
 - In the Orphaned Appliances group
If the discovered appliance does not fit a previously configured Family, it is placed in the Orphaned Appliances group.
 - In the Orphaned Externally Configured Appliances group
Appliances that are running the Advanced Appliance Configuration Utility agent but have a network configuration that was not set by the Advanced Appliance Configuration Utility agent or console appear in the *Orphaned Externally Configured Appliances* group. If an appliance is contained in the Orphaned Externally Configured Appliances group, you can use the Adopt By First Matching Family function to add it to a previously defined family. For more information, see “Using the Adopt by First Matching Family function” on page 22.

Using families and groups in the tree view

Families specify the parameters that the Advanced Appliance Configuration Utility uses to automatically categorize discovered appliances and to configure them with the appropriate network settings. Family rules are defined solely by appliance type or purpose. Each family can contain only one type of appliance. The only way to automatically apply predetermined network settings to newly installed and discovered appliance servers is to create and use families.

Appliance servers that match the rules criteria for a family group can be automatically configured to use predefined network settings. A family can be defined to automatically assign IP settings (such as primary gateway and DNS server addresses, assigning an IP address from a specified IP address range, and specifying a subnet mask). Host names for discovered appliances can also be defined so that they are allocated using either a prefix or serial number.

The Advanced Appliance Configuration Utility is not the only way to configure network settings. For example, you can configure network settings using Appliance System Manager or by attaching a keyboard and mouse to the appliance and using a Linux command line or other configuration utility on the server. If the appliance network settings have been configured by a method other than using the Advanced Appliance Configuration Utility, the appliance will be discovered by the Advanced Appliance Configuration Utility and it will be added to an appropriate family, if one

exists. Appliances that have been configured using a method other than the Advanced Appliance Configuration Utility and for which no appropriate family exists will appear in the Orphaned Externally Configured Appliances group.

The Tree View pane contains the following items:

- All Appliances

Every discovered appliance is listed in the tree view under **All Appliances**.

- Families

The families group in the Tree View pane shows all families that have been defined, with appliance servers that have already been assigned to each family nested beneath the family name in the tree view. Since families are defined by appliance purpose, all appliances that appear in a given family are of the same type. If you select a family from the Tree View pane, a description of the family and the rules that are used to define the selected Family are displayed in the Information pane. If you select an appliance server from a family in the Tree View pane, the selected appliance network settings are displayed in the Information pane.

The Advanced Appliance Configuration Utility automatically assigns one IP address within the range that is defined in the family rules per appliance server. When a family IP address range has been exhausted, the Advanced Appliance Configuration Utility automatically searches for other families that have rules matching the appliance server that is being configured. If a matching family with an available address is found, the server will automatically be assigned to the family that has available IP addresses. This enables you to define multiple families, each of which uses a range of noncontiguous IP address ranges.

When an appliance is discovered on the network, the Advanced Appliance Configuration Utility automatically searches all previously defined families, starting with the first family that is listed in the families tree view and moving downward. Appliances are automatically added to the first defined family that matches the appliance purpose. Therefore, the order in which families appear is important. To adjust this search order, right-click a family and then click **Move Up** or **Move Down** to adjust its position within the families list.

- Orphaned Appliances

Any discovered appliance servers that have been configured using the Advanced Appliance Configuration Utility but that do not match the rules for any existing family are automatically added to the Orphaned Appliances group.

- Orphaned Externally Configured Appliances

Any discovered appliance server that has been configured without the Advanced Appliance Configuration Utility tool and does not meet the rules for any existing family is automatically added to the Orphaned Externally Configured Appliances group. Appliance servers that are configured without the Advanced Appliance Configuration Utility and meet the rules for any existing family are automatically added to the matching family. To add an Orphaned Externally configured Appliance to an appropriate family that was created after the orphaned appliance was discovered, right-click the orphaned appliance and click **Adopt by First Matching Family**. For more information, see “Using the Adopt by First Matching Family function” on page 22.

Note: The Advanced Appliance Configuration Utility will not change manually configured network settings of discovered appliance servers. If the manually configured IP and Subnet addresses fit an existing family, the Advanced Appliance Configuration Utility will place that appliance server into that family but will not change any other settings (such as Host Name or DNS or gateway addresses).

- **Conflicting Network Addresses**
Any discovered appliance server that has the same IP address as a previously discovered appliance server will be listed in the Conflicting Network Addresses group.

Creating a family

To create a family:

1. Click **Create Family** from the Family menu.

The Advanced Appliance Configuration Utility Family Setup window appears.

2. Select the Appliance Family Rules.

The Appliance Family Rules determine what purpose an appliance must serve to be included in the family. You can select one of the following values:

- IBM xSeries 150
- IBM xSeries 130 and 135

3. Type a name that will be used for this family in the **Family Name** field.

4. Assign network resources for members of the family.

5. Select a host name allocation type.

The host name allocation type enables you to automatically specify a specific host name that members of this Family will use. You can select one of the following host name allocation types:

No Allocation

No preconfigured host name format will be assigned to appliances that are members of the family.

Use Serial Number

The serial number of the discovered appliance will be used as a host name for the appliance.

Use Prefix Name

A user-specified prefix, along with an incremental number for each appliance, will be used for the host name of each appliance that is a member of this family. Type the desired prefix in the **Host Name Prefix** field.

6. Click **OK** to save this Family.

Removing Appliances from families

Use the **Remove Appliance** choice to delete an appliance from the Advanced Appliance Configuration Utility console database. Removing an appliance that is no longer in use enables the IP address that was assigned to the appliance to be allocated to another appliance. You can also removing an appliance from a family and then Rescan the network to add it to an appropriate family that appears higher in the Tree View pane.

To remove an appliance, right-click the appliance, and then click **Remove Appliance** from the pop-up menu.

- If the Advanced Appliance Configuration Utility is unable to communicate with the selected appliance (because, for example, it has been removed from the network or has failed), the appliance is removed immediately.
- If the Advanced Appliance Configuration Utility is able to communicate with the selected appliance, you will be asked to confirm removal of the appliance before the appliance-removal task is completed. This helps prevent accidental removal of an active and functional appliance.

Using the Adopt by First Matching Family function

Use the Adopt by First Matching Family function to:

- Add an Orphaned Externally Configured Appliance to an appropriate family.
Appliances that have been configured without using the Advanced Appliance Configuration Utility tool and that do not meet the rules for any existing family are automatically added to the Orphaned Externally Configured Appliances group. If, after the orphaned appliance is discovered, you create a family that is appropriate for the orphaned appliance, right-click the orphaned appliance and click **Adopt by First Matching Family** to move the appliance from the Orphaned Externally Configured Appliances group to the newly created family.
- Move an appliance from one family to another appropriate family that occurs higher in the list of previously defined families. If there is more than one appropriate family for a newly discovered appliance, it automatically appears in the first appropriate family in the list of families. If you want to move a discovered appliance from one appropriate family to another appropriate family:
 1. Right-click the family to which you want to move the appliance.
 2. Click **Move Up in List** to move the selected family up in the list of families. Repeat steps 1 and 2 until the family that you want to add the appliance to appears above the family that currently contains the appliance.
 3. Right-click the appliance that you want to move to another family, and then click **Adopt by First Matching Family**.

Chapter 5. Using the Recovery and Supplementary CDs

This chapter describes the applications that are included on the *IBM xSeries 135 Supplementary* and *Recovery* CDs and information about how and when you should use them.

Using the recovery enablement diskette and Recovery CD

The *Recovery* CD is a startable CD that you can use to recover the preinstalled programs on your IBM xSeries 135 appliance server. You must start your server using a recovery enablement diskette in order to use the *Recovery* CD. You can create a recovery enablement diskette using a utility on the *Supplementary* CD.

To create a recovery enablement diskette, do the following:

1. Insert the *Supplementary* CD into the CD-ROM drive of a remote computer running Microsoft Windows 98, Windows NT, or Windows 2000.
2. Run `\Recovery_Enablement_Disk\DiskCreator.exe`.
3. Choose either **Reload** or **Reformat**. The **Reload** option restores your appliance to its original configuration and leaves the data partition (`/home`) untouched. The **Reformat** option erases all data on the hard disk of the appliance and makes no attempt to save any information in any partition of the disk.
4. Select either to use a new diskette or an existing diskette. A warning message appears. Click **Yes** or **No**.
5. Click **Agree** at the license agreement.

Important

The recovery enablement diskette enables the IBM xSeries 135 appliance server to start from the CD-ROM drive. You will not be able to restore the preinstalled programs from the *Recovery* CD without restarting the server using the recovery enablement diskette.

You can reinstall the software using the *Recovery* CD. The *Recovery* CD must be accompanied by a recovery enablement diskette.

To recover the preinstalled programs on your server:

1. Insert the recovery enablement diskette into the diskette drive and the *Recovery* CD in the CD-ROM drive and restart the server. The recovery process begins automatically and the preinstalled programs are restored with the original settings and configuration. After the preinstalled programs are restored, the system restarts automatically, and all final operating system configuration changes are performed.
2. After the software reinstalls, the *Recovery* CD ejects and the appliance restarts using the initial software and configuration.
3. Perform the initial setup procedures that are required to configure the appliance. See "Setting the initial Internet protocol (IP) address" on page 6.

4. Finish restoring the software using the Appliance System Manager administrative interfaces to do any of the following tasks:
 - Install any required software upgrades.
 - Restore the configuration of the appliance using backed-up configuration information.
 - Perform any other desired configuration and administrative actions to fully restore the appliance.
 - Restore the appliance application data, if required.
5. Restart the appliance using the restored applications and configuration.

Note: Although data is not affected by recovering the preinstalled programs on the appliance server when you use the **Reload** option, the data is not accessible until a backed-up system configuration is restored to redefine the system users that own the data. Store up-to-date configuration backups on a different computer.

Using the Supplementary CD

The *Supplementary CD* contains copies of key software applications that are preinstalled on your IBM xSeries 135 appliance server. The following table lists the names of the directories on the *Supplementary CD* and a description of the contents of each directory.

Directory name	Contents
IBM Advanced Appliance Configuration	IBM Advanced Appliance Configuration console and agent installation files. The IBM Advanced Appliance Configuration agent is preinstalled on the IBM xSeries 135 appliance server. To install the Advanced Appliance Configuration console, run setup.exe from the x:\IBM Advanced Appliance Configuration directory, where x is the drive letter assigned to your CD-ROM drive.
License	License information for the preinstalled IBM and non-IBM software.
Recovery_Enablement_Disk	DiskCreator.exe and related files. See “Using the recovery enablement diskette and Recovery CD” on page 23 for a description of how to use the DiskCreator.exe utility to create a recovery enablement diskette.
Sources	RPM packages of the source code of the open-source software preinstalled on the IBM xSeries 135 appliance server.
readme.txt	A text file that describes the contents of the <i>Supplementary CD</i> .

Chapter 6. Solving problems

This section provides basic troubleshooting information to help you resolve some common problems that might occur while setting up your server.

If you cannot locate and correct the problem using the information in this section, see the "Solving problems" section in the *User's Reference* on the *IBM xSeries Documentation* CD and the "Server Support+" flowchart in the front of this book for additional information.

Note: Changing the preinstalled software configuration in any way, including upgrading preinstalled software, applying service packs, and reinstalling preinstalled software components, is not supported. To correct problems with a preinstalled software component, you must backup your user and system data and then use the recovery enablement diskette and *Recovery* CD to restore the preinstalled programs.

Diagnostic tools overview

If you are unable to connect to your appliance, first confirm that the problem is not being caused by a network connectivity issue. When you have confirmed network connectivity, contact IBM service or attach a monitor, mouse, and keyboard to your appliance and troubleshoot the appliance server using the following tools and procedures.

The following tools are available to help you identify and resolve hardware-related problems:

- Beep codes and error messages

The power-on self-test (POST) generates beep codes to indicate successful test completion or the detection of a problem.

- One beep indicates successful completion of POST.
- More than one beep indicates that POST detected a problem. Error messages also appear during startup if POST detects a hardware-configuration problem.

See "POST beep code descriptions" on page 26 and "POST error messages" on page 26 for more information.

- Troubleshooting chart

This chart lists problem symptoms, along with suggested steps to correct the problems. See the "Troubleshooting chart" on page 28 for more information.

- Event/error logs

The POST Error Log contains the three most recent error codes and messages that the system generated during POST. The System Event/Error Log contains all error messages issued during POST and all system status messages from the Netfinity Advanced System Management Processor.

To view the contents of the error logs, start the Configuration/Setup Utility program; then, select Event/Error Logs from the main menu.

- Diagnostic programs and error messages

The server diagnostic programs are stored in upgradable read-only memory (ROM) on the system board. These programs are the primary method of testing the major components of your server.

Note: See the "Solving Problems" section in the *User's Reference* on the *IBM xSeries Documentation CD* for more detailed information about the diagnostic programs.

POST beep code descriptions

POST emits one beep to signal successful completion. If POST detects a problem during startup, other beep codes might occur. You can use the following beep code descriptions to help identify and resolve problems that are detected during startup.

Note: See the "Solving Problems" section in the *User's Reference* on the *IBM xSeries Documentation CD* for more detailed information about the POST beep codes.

Table 2. POST beep code descriptions

Beep code	Descriptions of the POST beep codes
No beep	Call for service.
Continuous	If no video appears, the startup microprocessor failed. Verify that the startup microprocessor is installed correctly. If it is, replace the startup microprocessor. If the problem persists, call for service.
One short	POST completed successfully. One beep also occurs after POST if you enter an incorrect password.
Two short	Follow the instructions that appear on the screen.
Three short	POST detected a system memory error. Verify that the memory is installed correctly. If it is, replace the failing memory module. Note: When you first start up the appliance server, three short beeps indicates normal operation. However, if the appliance server does not start up properly and you hear three short beeps, the problem might be a system memory error.
Repeating short	The system board might contain a failing component. <ol style="list-style-type: none"> 1. Verify that the keyboard and pointing devices are connected properly. 2. Ensure that nothing is resting on the keyboard. 3. Disconnect the pointing device; then, restart the server. If the problem goes away, replace the pointing device. If the problem remains, call for service.
One long and one short	If the video controller on the system board is being used, call for service. If you installed an optional video adapter, replace the failing adapter
One long and two short	A video I/O adapter ROM is not readable, or the video subsystem is defective. If you installed an optional video adapter, replace the failing adapter. If the problem remains, call for service.
One long and three short	The system-board video subsystem has not detected a monitor connection to the server. Ensure that the monitor is connected to the server. If the problem persists, replace the monitor.
Two long and two short	POST does not support the optional video adapter. Replace the optional video adapter with one that is supported by the server or use the integrated video controller.
All other beep codes	<ol style="list-style-type: none"> 1. Verify that the system memory modules are installed correctly. 2. Turn off the server; then, restart the server. If the problem remains, call for service.

POST error messages

The following table provides an abbreviated list of the error messages that might appear during POST.

Note: See the "Solving Problems" section in the *User's Reference* on the *IBM xSeries Documentation CD* for more detailed information about POST error messages.

Table 3. Abbreviated list of POST error messages

POST message	Failing device or problem found	Suggested action
129	L1 cache of a microprocessor	Check the installation of your microprocessors.
162	Change in device configuration	Verify that your optional devices are turned on and installed correctly.
163	Time of day has not been set	Set the correct date and time.
164	Change in memory configuration	Verify that your memory is installed properly; then, restart the server and run the Configuration/Setup Utility program.
201	Change in memory configuration	Verify that your memory is fully seated and installed properly.
229	L2 cache of a microprocessor	Check the installation of your microprocessors.
289	Failing DIMM was disabled	Verify that your memory is correct for your server and that it is installed properly.
301 303	Keyboard and keyboard controller	Ensure that the keyboard cable is connected and nothing is resting on the keyboard keys.
962	Parallel port configuration error	Start the Configuration/Setup Utility program and verify that the parallel-port setting is correct.
11xx	Serial port error	Verify that the serial cable is connected correctly.
1162	Serial port configuration conflict	Start the Configuration/Setup Utility program and ensure that the IRQ and I/O port assignments needed by the serial port are available.
1601	BIOS update needed	Download and install the latest system BIOS level.
1800	PCI adapter hardware interrupt	Start the Configuration/Setup Utility program and verify that the interrupt resource settings are correct.
2400 2462	Video controller and memory	Verify that the monitor is connected correctly.
00019xxx	Processor <i>x</i> is not functioning or failed the built-in test	Verify that processor <i>x</i> is installed correctly. If the problem remains, replace processor <i>x</i> .
00180xxx	A PCI adapter requested a resource that is not available	Start the Configuration/Setup Utility program and ensure that the resources needed by the PCI adapter are available.
012980xx 012981xx	Data for processor <i>x</i>	Download and install the latest system BIOS level.
01298200	Microprocessor speed mismatch	Install microprocessors with identical speeds.
I9990305	POST could not find an operating system.	Install your operating system.

Troubleshooting chart

Notes:

1. See the "Solving Problems" section in the *User's Reference* on the *IBM xSeries Documentation CD* for more detailed troubleshooting charts.
2. If you cannot find the problem in the troubleshooting charts, run the diagnostic programs. If you have run the diagnostic test programs, or if running the tests does not reveal the problem, call for service.

Monitor	Suggested action
The screen is blank.	Verify that: <ul style="list-style-type: none"> • The server power cord is plugged into the server and a working electrical outlet. • The monitor cables are connected properly. • The monitor is turned on and the Brightness and Contrast controls are adjusted correctly. Some IBM monitors have their own self-tests. If you suspect a problem with your monitor, see the information that comes with the monitor for adjusting and testing instructions. If the problem persists, call for service.
Only the cursor appears.	Call for service.
The monitor works when you turn on the server, but goes blank when you start some application programs.	Verify that: <ul style="list-style-type: none"> • The primary monitor cable is connected to the video port. • You installed the necessary device drivers for the applications. If the problem persists, call for service.
Wavy, unreadable, rolling, distorted screen, or screen jitter.	If the monitor self-tests show the monitor is OK, consider the location of the monitor. Magnetic fields around other devices (such as transformers, appliances, fluorescent lights, and other monitors) can cause screen jitter or wavy, unreadable, rolling, or distorted screen images. If this happens, turn off the monitor. (Moving a color monitor while it is turned on might cause screen discoloration.) Then move the device and the monitor at least 305 mm (12 in.) apart. Turn on the monitor. Notes: <ol style="list-style-type: none"> 1. To prevent diskette drive read/write errors, be sure the distance between monitors and diskette drives is at least 76 mm (3 in.). 2. Non-IBM monitor cables might cause unpredictable problems. 3. An enhanced monitor cable with additional shielding is available for the 9521 and 9527 monitors. For information about the enhanced monitor cable, see your IBM reseller or IBM marketing representative. If the problem remains, call for service.
Wrong characters appear on the screen.	If the wrong language is displayed, update the BIOS with the correct language. If the problem remains, call for service.
Power problems	Suggested action

The server does not power on.	<p>Verify that:</p> <ul style="list-style-type: none"> • The power cables are properly connected to the server. • The electrical outlet functions properly. • The type of memory that is installed is correct. • If you just installed an option, remove it, and restart the server. If the server now powers on, you might have installed more options than the power supply supports. • The LEDs on the power supply are on. <p>If the problem remains, call for service.</p>
Microprocessor problems	Suggested action
The server emits a continuous tone during POST.	<p>The startup (boot) microprocessor is not working properly.</p> <p>Verify that the startup microprocessor is seated properly. If it is, replace the startup microprocessor.</p> <p>If the problem remains, call for service.</p>
Memory problems	Suggested action
The amount of memory displayed is less than the amount of memory installed.	<p>Verify that:</p> <ul style="list-style-type: none"> • The memory modules are seated properly. • You have installed the correct type of memory. • If you changed the memory, you updated the memory configuration with the Configuration/Setup Utility program. • All banks of memory on the DIMMs are enabled. The server might have automatically disabled a DIMM bank when it detected a problem or a DIMM bank could have been manually disabled. <p>If the above items are correct, run the memory diagnostic program. The system might have detected a bad memory module and automatically reallocated memory to enable you to continue to operate. If the memory tests fail, call for service or replace the failing DIMM.</p>
Option problems	Suggested action
An IBM option that was just installed does not work.	<p>Verify that:</p> <ul style="list-style-type: none"> • The option is designed for the server. Refer to the "Support for IBM xSeries Servers" flowchart for information about obtaining ServerProven™ compatibility information from the World Wide Web. • You followed the installation instructions that came with the option. • The option is installed correctly. • You have not loosened any other installed options or cables. • You updated the configuration information in the Configuration/Setup Utility program. Whenever memory or an option is changed, you must update the configuration. <p>If the problem remains, call for service.</p>
Expansion enclosure problems	Suggested action

<p>The SCSI expansion enclosure used to work, but does not work now.</p>	<p>Verify that:</p> <ul style="list-style-type: none"> • The cables for all external SCSI options are connected correctly. • The last option in each SCSI chain, or the end of the SCSI cable, is terminated correctly. • Any external SCSI option is turned on. You must turn on an external SCSI option before turning on the server. <p>For more information, see your SCSI and expansion enclosure documentation.</p>
<p>Service processor problems</p>	<p>Suggested action</p>
<p>Netfinity Service Processor Manager reports a general monitor failure</p>	<p>Disconnect the server from all electrical sources, wait for 30 seconds, reconnect the server to the electrical sources, and restart the server.</p> <p>If a problem remains, call for service.</p>

Appendix A. Product warranties and notices

This chapter contains warranty and emission notices. It also contains trademarks and general-information 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 all countries. 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)**
("IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (Part 1 - General Terms)")
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)**
("IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 – General Terms)" on page 34)
- **Worldwide Country-Unique Terms**
("Part 2 - Worldwide Country-Unique Terms" on page 36)

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 @server xSeries 135

Warranty Period* - Three Years

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

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date

on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

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

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

Extent of Warranty

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

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

Items Not Covered by Warranty

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

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

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

Warranty Service

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

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

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

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

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

You also agree to

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

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

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

Production Status

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

Limitation of Liability

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

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL,

OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

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

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

Machine - IBM @server xSeries 135

Warranty Period* - Three Years

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

The IBM Warranty for Machines

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

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

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

Extent of Warranty

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

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

Items Not Covered by Warranty

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

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

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

Warranty Service

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

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

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

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

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

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
 - b. secure all programs, data, and funds contained in a Machine,

- c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to 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.

Part 2 - Worldwide Country-Unique Terms

ASIA PACIFIC

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

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

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

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment,

operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

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

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

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

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

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

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

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

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

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

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

EUROPE, MIDDLE EAST, AFRICA (EMEA)

The following terms apply to all EMEA countries.

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

Warranty Service

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

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

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

The following terms apply to the country specified:

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

Applicability of suppliers and resellers (unchanged).

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

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

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

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

Extent of Warranty: The second paragraph does not apply.

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

Production Status: The following paragraph replaces this Section:
Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

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

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

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

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

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

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

Applicability of suppliers and resellers (unchanged).

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

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

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

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

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section:

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

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND:

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

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

TURKIYE: Production Status: The following replaces this Section:

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

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

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

The following item is added to this paragraph:

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

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section:

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

NORTH AMERICA

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

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

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

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

License Agreement for Warranted Programs

The Program consists of software components that are licensed pursuant to the terms of the IBM International Program License Agreement. These components are

Appliance System Manager, the Application Server, IBM HTTP Server and Distributed Debugger.

Except as provided below, you are authorized to install and use one copy of each component of the Program on the same machine for each valid Proof of Entitlement to the Program. In addition, for each Proof of Entitlement:

APPLIANCE SYSTEM MANAGER: Notwithstanding anything in this Agreement to the contrary, you are authorized to install and use an unlimited number of copies of the Appliance System Manager component of the Program on any of your machines.

ADMIN CLIENT AND DISTRIBUTED DEBUGGER COMPONENTS: Notwithstanding anything in this Agreement to the contrary, you are authorized to install and use an unlimited number of copies of the Admin Client and Distributed Debugger components of the Program on any of your machines.

The IBM HTTP Server component of the Program includes machine translation technology. You hereby acknowledge and agree that machine translation is an inherently statistical process designed to produce a translation which approximates the meaning of the original text. IBM does not warrant that translations generated using machine translation technology will be error free.

THIRD PARTY CODE: The Program contains third party code, some of which may be provided to you under terms and conditions which are different from this Agreement. In addition, IBM's license for some of this third party code may require IBM to provide you with certain notices and/or information. Such terms and conditions, notices and information are provided in the Program's "readme" file, or in a file or files referenced by the Program's "readme" file. You acknowledge and agree to all such terms and conditions, notices and information, including those provided only in the English language.

IBM HTTP SERVER AND THE APACHE HTTP SERVER: The IBM HTTP Server component of the Program includes software developed by The Apache Group for use in the Apache HTTP Server project (<http://www.apache.org/>). In addition, the Program is accompanied by source code for the Apache HTTP Server. The portions of the IBM HTTP Server which are based on software developed by The Apache Group and the source code for the Apache HTTP Server are Copyright (c) 1995-1999 The Apache Group. All rights reserved. Your use of the source code for the Apache HTTP Server accompanying the Program is subject to the terms and conditions of the license from The Apache Group, which is reproduced in the Program's "readme" file or in a file or files referenced by the Program's "readme" file, and not this Agreement. In particular, IBM is providing the source code for the Apache HTTP Server on an AS-IS BASIS, WITHOUT WARRANTY OF ANY KIND (EITHER EXPRESS OR IMPLIED) INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OF NON-INFRINGEMENT. You may not disclose the results of any benchmark test of IBM HTTP Server to any third party without IBM's prior written approval. Notwithstanding anything to the contrary in this Agreement, you are authorized to install and use an unlimited number of copies of the IBM HTTP Server component of the Program on any of your machines, provided that only one such

copy of IBM HTTP Server will be subject to the representations and warranties of this Agreement and will be eligible for Program Services.

International License Agreement for Non-Warranted Programs

Part 1 — General Terms

PLEASE READ THIS AGREEMENT CAREFULLY BEFORE USING THE XSERIES 135 APPLIANCE SERVER. IBM WILL LICENSE THE XSERIES 135 APPLIANCE SERVER TO YOU ONLY IF YOU FIRST ACCEPT THE TERMS OF THIS AGREEMENT. BY USING THE XSERIES 135 APPLIANCE SERVER YOU AGREE TO THESE TERMS. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, PROMPTLY RETURN THE UNUSED XSERIES 135 APPLIANCE SERVER TO THE PARTY (EITHER IBM OR ITS RESELLER) FROM WHOM YOU ACQUIRED IT TO RECEIVE A REFUND OF THE AMOUNT YOU PAID.

The Program is owned by International Business Machines Corporation or one of its subsidiaries (IBM) or an IBM supplier, and is copyrighted and licensed, not sold.

The term "Program" means the original program and all whole or partial copies of it. A Program consists of machine-readable instructions, its components, data, audio-visual content (such as images, text, recordings, or pictures), and related licensed materials.

This Agreement includes Part 1 - General Terms and Part 2 - Country-unique Terms and is the complete agreement regarding the use of this Program, and replaces any prior oral or written communications between you and IBM. The terms of Part 2 may replace or modify those of Part 1.

1. License

Use of the Program

IBM grants you a nonexclusive license to use the Program.

You may 1) use the Program to the extent of authorizations you have acquired and 2) make and install copies to support the level of use authorized, providing you reproduce the copyright notice and any other legends of ownership on each copy, or partial copy, of the Program.

If you acquire this Program as a program upgrade, your authorization to use the Program from which you upgraded is terminated.

You will ensure that anyone who uses the Program does so only in compliance with the terms of this Agreement.

You may not 1) use, copy, modify, or distribute the Program except as provided in this Agreement; 2) reverse assemble, reverse compile, or otherwise translate the Program except as specifically permitted by law without the possibility of contractual waiver; or 3) sublicense, rent, or lease the Program.

Transfer of Rights and Obligations

You may transfer all your license rights and obligations under a Proof of Entitlement for the Program to another party by transferring the Proof of Entitlement and a copy of this Agreement and all documentation. The transfer of your license rights and obligations terminates your authorization to use the Program under the Proof of Entitlement.

2. Proof of Entitlement

The Proof of Entitlement for this Program is evidence of your authorization to use this xSeries 135 appliance server and of your eligibility for future upgrade program prices (if announced) and potential special or promotional opportunities.

3. Charges and Taxes

IBM defines use for the Program for charging purposes and specifies it in the Proof of Entitlement. Charges are based on extent of use authorized. If you wish to increase the extent of use, notify IBM or its reseller and pay any applicable charges. IBM does not give refunds or credits for charges already due or paid.

If any authority imposes a duty, tax, levy or fee, excluding those based on IBM's net income, upon the Program supplied by IBM under this Agreement, then you agree to pay that amount as IBM specifies or supply exemption documentation.

4. No Warranty

SUBJECT TO ANY STATUTORY WARRANTIES WHICH CAN NOT BE EXCLUDED, IBM MAKES NO WARRANTIES OR CONDITIONS EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE WARRANTY OF NON-INFRINGEMENT AND THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE PROGRAM OR TECHNICAL SUPPORT, IF ANY. IBM MAKES NO WARRANTY REGARDING THE CAPABILITY OF THE PROGRAM TO CORRECTLY PROCESS, PROVIDE AND/OR RECEIVE DATE DATA WITHIN AND BETWEEN THE 20TH AND 21ST CENTURIES.

The exclusion also applies to any of IBM's subcontractors, suppliers, or program developers (collectively called "Suppliers").

Manufacturers, suppliers, or publishers of non-IBM Programs may provide their own warranties.

5. Limitation of Liability

NEITHER IBM NOR ITS SUPPLIERS WILL BE LIABLE FOR ANY DIRECT OR INDIRECT DAMAGES, INCLUDING WITHOUT LIMITATION, LOST PROFITS, LOST SAVINGS, OR ANY INCIDENTAL, SPECIAL, OR OTHER ECONOMIC CONSEQUENTIAL DAMAGES, EVEN IF IBM IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

6. General

Nothing in this Agreement affects any statutory rights of consumers that cannot be waived or limited by contract.

IBM may terminate your license if you fail to comply with the terms of this Agreement. If IBM does so, you must immediately destroy the Program and all copies you made of it.

You agree to comply with applicable export laws and regulations.

Neither you nor IBM will bring a legal action under this Agreement more than two years after the cause of action arose unless otherwise provided by local law without the possibility of contractual waiver or limitation.

Neither you nor IBM is responsible for failure to fulfill any obligations due to causes beyond its control.

IBM does not provide program services or technical support, unless IBM specifies otherwise.

The laws of the country in which you acquire the Program govern this Agreement, except 1) in Australia, the laws of the State or Territory in which the transaction is performed govern this Agreement; 2) in Albania, Armenia, Belarus, Bosnia/Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine, and Federal Republic of Yugoslavia, the laws of Austria govern this Agreement; 3) in the United Kingdom, all disputes relating to this Agreement will be governed by English Law and will be submitted to the exclusive jurisdiction of the English courts; 4) in Canada, the laws in the Province of Ontario govern this Agreement; and 5) in the United States and Puerto Rico, and People's Republic of China, the laws of the State of New York govern this Agreement.

Part 2 - Country-unique Terms

AUSTRALIA: No Warranty (Section 4):

The following paragraph is added to this Section:

Although IBM specifies that there are no warranties, you may have certain rights under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability (Section 3):

The following paragraph 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.

GERMANY: No Warranty (Section 4):

The following paragraphs are added to this Section:

The minimum warranty period for Programs is six months.

In case a Program is delivered without Specifications, we will only warrant that the Program information correctly describes the Program and that the Program can be used according to the Program information. You have to check the usability according to the Program information within the "money-back guaranty" period.

Limitation of Liability (Section 5):

The following paragraph is added to this Section:

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

INDIA: General (Section 6):

The following replaces the fourth paragraph of this Section:

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The following paragraph is added to this Section:

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ITALY: Limitation of Liability (Section 5):

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The following paragraph is added to the Section:

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

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

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

Industry Canada Class A emission compliance statement

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

Avis de conformité à la réglementation d'Industrie Canada

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

Australia and New Zealand Class A statement

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

United Kingdom telecommunications safety requirement

Notice to Customers

This apparatus is approved under approval number NS/G/1234/J/100003 for indirect connection to public telecommunication systems in the United Kingdom.

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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 A Information Technology Equipment according to CISPR 22/European Standard EN 55022. The Limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

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

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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.

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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.

IBM power cord part number	Used in these countries and regions
13F9940	Argentina, Australia, China (PRC), New Zealand, Papua New Guinea, Paraguay, Uruguay, Western Samoa
13F9979	Afghanistan, Algeria, Andorra, Angola, Austria, Belgium, Benin, Bulgaria, Burkina Faso, Burundi, Cameroon, Central African Rep., Chad, China (Macau S.A.R.), Czech Republic, Egypt, Finland, France, French Guiana, Germany, Greece, Guinea, Hungary, Iceland, Indonesia, Iran, Ivory Coast, Jordan, Lebanon, Luxembourg, Malagasy, Mali, Martinique, Mauritania, Mauritius, Monaco, Morocco, Mozambique, Netherlands, New Caledonia, Niger, Norway, Poland, Portugal, Romania, Senegal, Slovakia, Spain, Sudan, Sweden, Syria, Togo, Tunisia, Turkey, former USSR, Vietnam, former Yugoslavia, Zaire, Zimbabwe
13F9997	Denmark
14F0015	Bangladesh, Burma, Pakistan, South Africa, Sri Lanka
14F0033	Antigua, Bahrain, Brunei, Channel Islands, China (Hong Kong S.A.R.), Cyprus, Dubai, Fiji, Ghana, India, Iraq, Ireland, Kenya, Kuwait, Malawi, Malaysia, Malta, Nepal, Nigeria, Polynesia, Qatar, Sierra Leone, Singapore, Tanzania, Uganda, United Kingdom, Yemen, Zambia
14F0051	Liechtenstein, Switzerland
14F0069	Chile, Ethiopia, Italy, Libya, Somalia
14F0087	Israel
1838574	Thailand
6952301	Bahamas, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Liberia, Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Suriname, Taiwan, Trinidad (West Indies), United States of America, Venezuela

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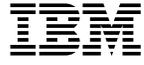
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