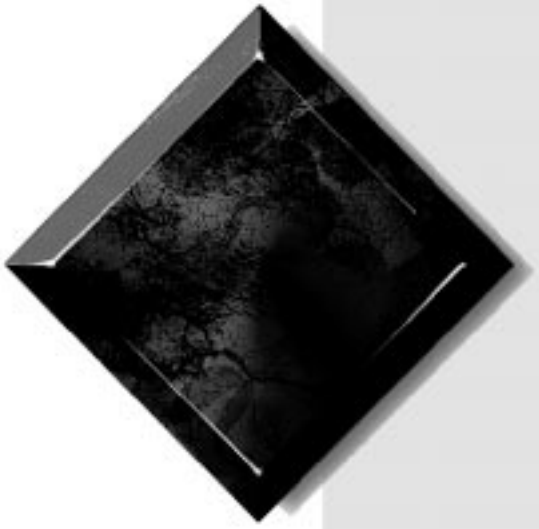

Gateway ALR 7200 User's Guide

Part #8504076 A MAN SYS US 7200 USR GDE R2 1/99

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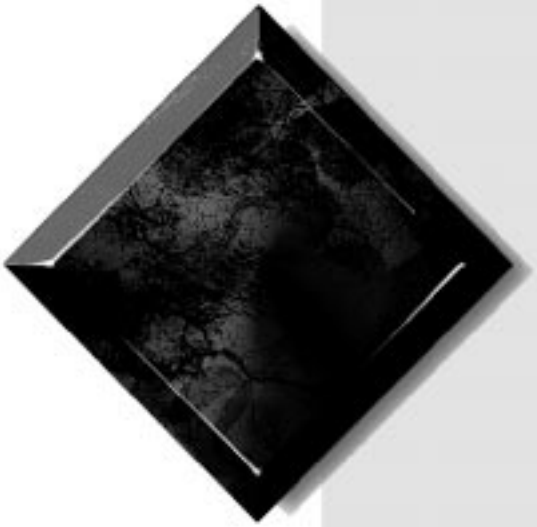
Contents



Preface

About this guide

The purpose of this User's Guide is to help you unpack, assemble, and install the system. This guide provides step-by-step setup and operating instructions along with detailed illustrations throughout the document. Below is a summary of the sections to follow:

Chapter 1: Getting Started covers information about the internal and external features as well as the system architecture and supported operating systems.

Chapter 2: System Features explains the main features of your system, including how to assemble it, identifying connectors and arranging your workspace.

Chapter 3: Maintaining and Cleaning Your System explains how to perform routine maintenance and cleaning on your system.

We recommend you take time to read through the manual before using the system. If you encounter a problem, refer to the handy troubleshooting section in this guide.

Conventions used in this guide

Throughout this booklet, you will see the following conventions:

Convention	Description
ENTER	Keyboard key names are printed in small capitals.
CTRL+ALT+DEL	A plus sign indicates that the keys must be pressed simultaneously.
Setup	Commands to be entered, options to select, and messages that appear on your monitor are printed in bold.
User's Guide	Names of publications and files are printed in italic.
Important!	An important informs you of special circumstances.
Caution!	A caution warns you of possible damage to equipment or loss of data.
Warning!	A warning indicates the possibility of personal injury.

Important safety instructions

Observe the following guidelines when performing any work on your system:

- Follow all instructions marked on this product and in the documentation.
- Unplug this product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near water. Do not spill liquid on or into the product.
- Do not place this product on an unstable surface.
- Openings in the system cabinet are provided for ventilation. Do not block or cover these openings. Do not place this product near or upon a radiator or heat register.
- Use only the power source indicated on the power supply. If you are not certain about your power source, consult your reseller or the local power company.
- This product is equipped with a 3-wire grounding plug (a plug with a grounding pin). This plug will only fit into a grounded power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace the outlet.
- Do not walk on the power cord or allow anything to rest on it.
- If you use an extension cord with this system, make sure the total ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, the total ampere requirements for all products plugged into the wall outlet must not exceed 15 amperes.
- Never insert objects of any kind into the system ventilation slots.
- Do not attempt to service the system yourself except as explained elsewhere in the manual. Adjust only those controls covered in the instructions. Opening or removing covers marked “Do Not Remove” may expose you to dangerous voltages or other risks. Refer all servicing of those compartments to qualified service personnel.

- Under any of the following conditions, unplug the system from the wall outlet and refer servicing to qualified personnel:
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not operate properly when the operating instructions are followed.
  - The system was dropped, or the cabinet is damaged.
  - The product exhibits a distinct change in performance.

★ *Important!*

The system power cord serves as the main disconnect for the computer. The wall outlet must be easily accessible by the operator.

1

Getting Started

Before you begin

Congratulations on your purchase. With the arrival of your new system, you are probably eager to assemble the computer and have it operating. This section helps you accomplish the following:

- Assembling the system
- Connecting the monitor and keyboard
- Powering up the system

Carefully read and follow these instructions to ensure your system operates correctly.

Assembling your system

1. Prepare a clean, flat, and firm surface for your computer. Allow at least three inches at the rear of the chassis for cabling and air circulation.
2. Protect your computer from extreme temperature and humidity. Do not expose your computer to direct sunlight, heater ducts, and other heat-generating objects.
3. Keep your system away from equipment that generates magnetic fields. Even a telephone placed too closely to the system may cause interference.
4. Protect your system against AC line spikes by using a 3-prong, 115-V or 230-V (depending on the voltage supplied in your locality), and an AC surge control outlet station. The system includes a 300W power supply.

Inspecting the contents

Unpack the carton and inspect the contents. Standard systems include the following items:

- System Unit
- Power Cable
- User's Guide
- Maintaining and Troubleshooting
- Utilities
- Enhanced Keyboard

Check the packing list to ensure all equipment and associated manuals are included in your shipment. Inspect everything carefully.

★ *Important!*

Keep the product carton and foam packing, in case you have to ship the system. If you return the system in different packaging, your warranty may be voided

Connecting peripherals

Refer to Figure 1 and the following procedures when connecting optional peripherals to your system.

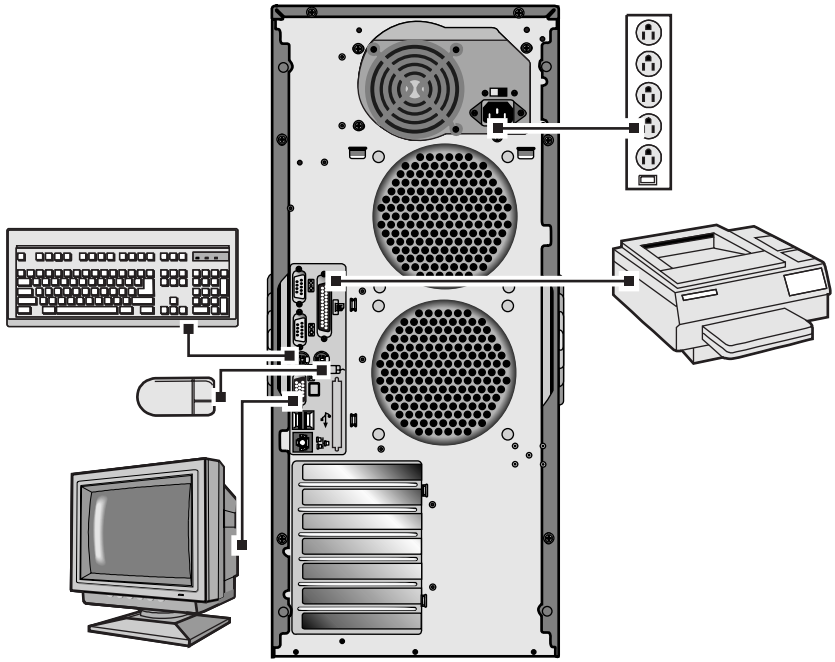


Figure 1: Connecting Peripherals

To connect peripherals to the back panel

1. Connect the keyboard and mouse to their respective ports, using the icons embossed on the system back panel as a guide.
2. Connect the monitor video cable to the video port. The location of the port may vary depending on whether you use the integrated video or a video card.

3. Connect the monitor power cable to an AC outlet or preferably, a surge control outlet station.
4. Verify that the voltage selector switch on the power supply is set for the proper voltage (115V or 230V).
5. Connect the system power cable to the AC-in power socket on the power supply.
6. Connect the other end of the system power cable to an AC outlet.

★ *Important!*

Shielded cables are required by the FCC.

Warning!

The bezel door must be closed and locked while the system is running.

Powering up the system

Look through this section before you turn on the server. You may be able to solve any problems you have at initial startup by verifying that the server setup has been completed correctly.

Press the on/off switch on the front panel, and the green LED on the front panel lights.

If you turn off the system, you must wait at least ten seconds before you turn the system back on.

The system self-checks the memory even if the monitor is not connected. If the monitor is connected and powered on, the screen displays the power-up sequence.

- If more than one processor is installed, the system displays which processor it is currently testing.
- If any errors are encountered, the server displays them on the monitor.
- If a monitor is not connected or the system is unable to display an error, an error beep code sounds.
- If the system encounters an error, it is most likely a nonfatal one, meaning the system will function until the error can be corrected (usually through the BIOS Setup).

Important!

Under no circumstances return any equipment without obtaining a Return Material Authorization (RMA) number.

Quick check

If the system does not operate correctly, re-read the instructions for any procedure(s) you have performed. If an error occurs within an application, consult the documentation supplied with the software.

This section identifies solutions to common problems. If the suggestions in this section are not helpful, try looking up the problem in the *Maintaining and Troubleshooting the ALR 7200 Server*. In the event of a problem, the following checks should be performed:

Looking things over

Sometimes, the simplest things can cause trouble. To avoid unnecessary service calls, be sure you check over the basics before you call for support. In any complex system, there is potential for a forgotten connection, a forgotten switch or a loose connector. Before powering up the system, perform the following checks:

- Is the power cord connected to the system unit and an AC outlet?
- Is the AC outlet supplying power?
- If you are using a power strip, is it turned on? Is the circuit breaker set?
- Does the voltage selection switch on the system power supply reflect the proper voltage?

Verifying the configuration

If the system is not operating correctly, the BIOS may contain an invalid configuration parameter. Enter the BIOS Setup program and check the configuration settings.

Troubleshooting guidelines

As you troubleshoot the system, keep the following guidelines in mind:

- Never remove the system covers while the system is powered up.
- Do not attempt to open the monitor, it is extremely dangerous. Even if the monitor power is disconnected, stored energy within the monitor components can cause a painful or harmful shock.
- If a peripheral such as the keyboard, mouse, drive, or printer does not appear to work, ensure that all connections are secure.
- If the screen displays an error message, write it down, word-for-word. You may be asked about it when calling Technical Support.
- Only qualified personnel should open the system for maintenance.
- If you are qualified to maintain the system yourself, make certain you are properly grounded before opening the chassis.

System Features

Basic features

- Intel Pentium® II processor (speed depends on the model)
- SMP design supporting up to two processor modules; Intel MP Specification V1.1 and 1.4 compliant
- 32-bit PCI and 16-bit ISA bus master; 64-bit processor and memory data path; extended PCI-to-PCI bridge support
- 32-MB Error Checking and Correcting (ECC) synchronous dynamic random access memory (SDRAM), expandable to 1-GB using ECC 60-ns 72-bit SDRAM DIMMs
- Integrated 2-MB DRAM PCI Graphics (Cirrus Logic GD54M30)
- Seven expansion slots: five PCI, one shared PCI/RAID port, and one shared PCI/ISA.
- Integrated dual channel PCI Ultra2 SCSI (Adaptec 7890) with two 68-pin connectors, dual-channel Ultra-DMA PCI IDE interface, and floppy controller supporting 1.44-MB and 2.88-MB formats.
- RAID port ready: the shared PCI/RAID port slot supports the addition of a RAID port card to provide RAID capability.
- Low voltage differential (LVD) support for SCSI devices. LVD SCSI allows faster disk access and greater data integrity
- Power supply unit that provides 300-W of DC power to internal system components.
- Phoenix upgradable Flash BIOS, Year 2000 Ready
- The system is equipped with InforManager™ (IFM), a special feature consisting of both hardware and software designed to monitor and report the operating status of the system and its devices: CPUs, power supplies, RAM, ambient temperatures, voltages, and fan operation. For further information about the InforManager™, refer to the *InforManager™ User's Guide.*

Front panel

The front panel of the system is equipped with switches, LEDs, and drive bays. Figure 2 shows the front panel and the table below provides the key.

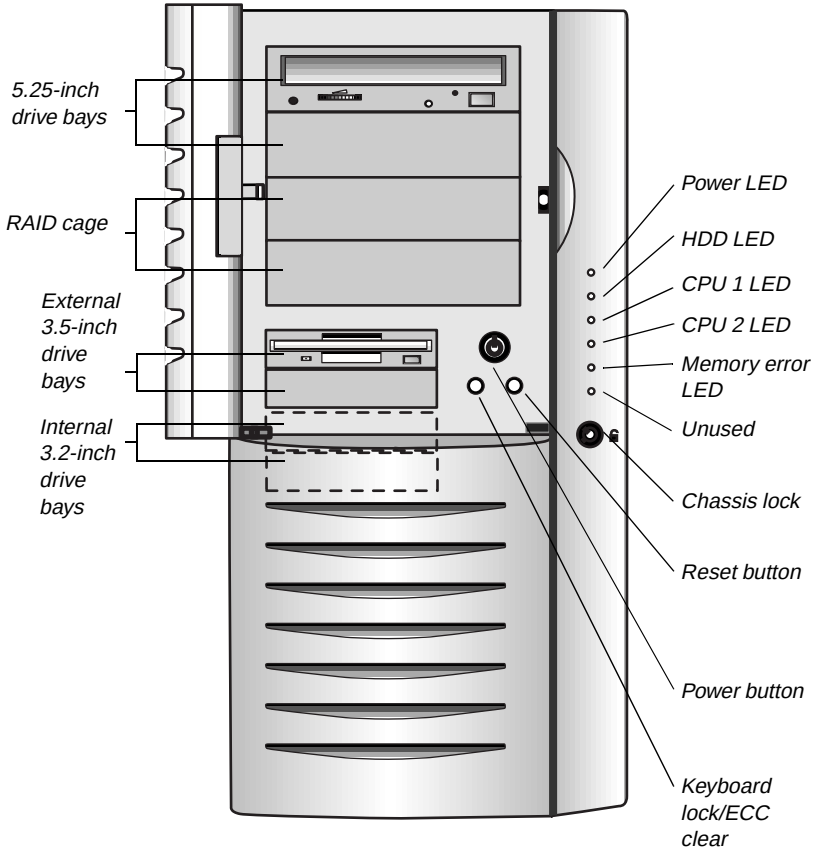


Figure 2: Front Panel

Storage bays

The system can support up to seven devices in the following bays:

- Two 5.25-inch front accessible bays that support any 5.25-inch device or any 3.5-inch device with a special mounting bracket.
- Two additional 5.25-inch drive bays that support a RAID Cage that supports up to three one-inch high, 3.5-inch single connector attachment (SCA) SCSI drives.
- Six 3.5-inch drive bays: two external bays, one of which has a factory-installed, 1.44-MB 3.5-inch diskette drive and two internal bays designed to support 3.5-inch hard drives. Two 3.5-inch internal drive bays mounted beneath the power supply which support a factory-installed hard drive.

Buttons

There are three buttons on the front panel. These buttons are defined in the following table.

Button	Function
Power button	Toggles the system ON or OFF.
Reset button	Allows you to reset the system without having to power it off and then on again
Keyboard lock/ECC clear button	Enables or disables the keyboard function and clears the error flag after an ECC error. Pressing this button does not correct the error condition. If the error condition has not been corrected, the LED will light again.

LED indicators

There are five LEDs on the front panel. These LEDs are defined in the following table.

LED	Meaning When Lit
Power	The system is on
Hard disk controller activity	The hard disk is being accessed
P1 activity	The first processor is active
P2 activity	The second processor is active
ECC fault	A memory error has been detected

Bezel door and keylock

The bezel door provides access to the power, reset, and keyboard lock/ECC clear buttons, as well as the 3.5-inch diskette drive, the other external 3.5-inch drive bay, the 5.25-inch drive bays and the RAID Cage bays. The door can be locked to prevent unauthorized access.

Warning!

The bezel door must be closed and locked while the system is running.

RAID cage bay

The RAID Cage bay supports connection of up to three 3.5-inch hot-swappable LVD SCA SCSI hard drives. The backplane automatically sets the SCSI ID numbers and provides termination. The backplane is at the back of the RAID Cage which is not shown in Figure 2 on page 11. The RAID Cage is a common option that occupies two 5.25-inch drive bays. It may appear as part of the standard configuration.

Rear panel

The rear panel of the system is equipped with I/O ports, connectors, and switches. Figure 3 shows the rear panel of the system.

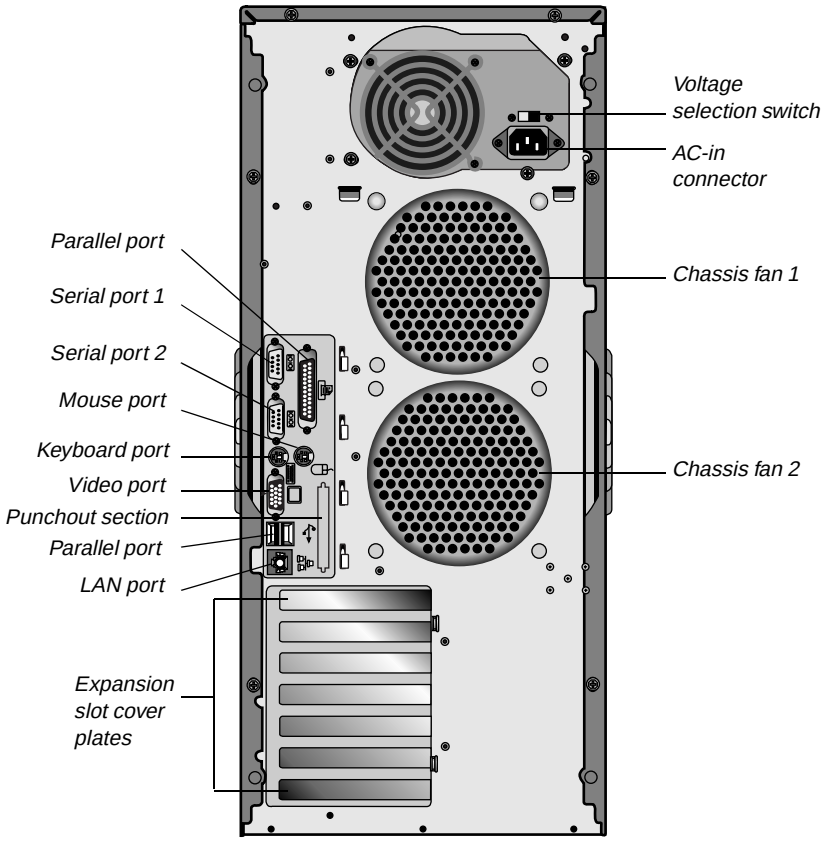


Figure 3: Rear Panel

Power supply connectors

The system supports one 300-Watt power supply.

Voltage selector switch

Located on the back of the power supply module, this switch must be set to the proper AC line voltage used in your locality (115VAC or 230VAC).

AC-in connector

This is a connector on the power supply which provides the electrical current to the system and its peripherals. Using the power cable supplied with the system, connect the power supply to a grounded wall outlet.

Expansion slot cover plates

These are cover plates over each of the expansion slots on the system board. The system board has five PCI slots, one shared PCI/ISAslot, and one PCI/RAIDport slot.

I/O ports

The I/O ports on the rear panel provide the point of connection for the peripherals that accompany the system and any others that you may purchase. The following table defines the ports.

Port	Definition
Serial ports 1 and 2	These are high speed serial ports which use the First-In-First-Out (FIFO) protocol. Connect a serial mouse to Serial Port 1 (COM1). Other serial devices can also be connected these ports.
Parallel port	Parallel devices such as parallel printers and scanners can be connected to this port.
Mouse port	This port supports any mouse with a miniature circular DIN (mini-DIN) connector.
Keyboard port	This port supports any keyboard with a miniature circular DIN (mini-DIN) connector.
Video port	Connects your monitor to the video interface card.
Dual USB ports	These ports support any USB compliant devices. USB keyboards and mice may not be compatible with power management.
Integrated LAN port	This port supports an RJ45 connector to the LAN. The LAN port has two small LEDs: The green LED lights when the port detects a valid link to the LAN. The amber LED lights when the port communicates at 100 Mbps. When this LED is off, the system communicates at 10 Mbps.

★ *Important!*

If your mouse has a mini-DIN connector, you must connect it to the mouse port.

Operating systems

The Gateway ALR 7300 is compliant with Intel MP Specification V1.1 or V1.4 (BIOS-selectable). The following operating systems support Symmetrical Multi-Processing (SMP).

- Novell NetWare SMP 4.x and 4.1x
- SCO UNIX Open Server 5.X
- UnixWare 2.1, 7.0 and 7.1
- Solaris® 2.51 and 2.6
- Microsoft Small Business Server (SBS)
- Microsoft Windows NT™ Server 4.0
- Microsoft Windows NT™ Server Enterprise 4.0

Current versions of the various operating systems are constantly changing. Contact Gateway Technical Support for the latest information about operating systems and support versions.

If your operating system does not support multi-processing, the system adjusts the processing mode to Asymmetrical, meaning only the first CPU accepts I/O interrupts. Any additional CPU's in the system receive only interprocessor interrupts.

★ *Important!*

The Pentium II Xeon processor in this server is designed to support 32-bit operating systems and applications. To ensure optimum performance, use only 32-bit programs on the Gateway ALR 7300 system.

Maintaining and Cleaning Your System

Maintaining your hard drive

Hard drives need regular maintenance because running the system software divides files, creates spaces between data, and otherwise decreases the hard drive's performance. Windows 95 and Windows NT provide maintenance tools that help prevent possible hard drive problems. The most important tools for hard drive maintenance are the programs ScanDisk (Windows 95 only), Check Disk (Windows NT only), and Disk Defragmenter (Windows 95 only).

Using ScanDisk

ScanDisk is a Windows 95 program that lets you check your hard disk for damaged areas and then repairs them. We suggest you scan your hard drive from at least once a week to once a month, depending on how often and how much you use your computer.

To use ScanDisk

1. Click on the **Start** button. Then click on **Programs**, then **Accessories**, then **System Tools**, and then **ScanDisk**.

   The ScanDisk window opens.

2. In the ScanDisk window, click on the drive you want to scan.

3. If you only want to check your files and folders for errors, select the **Standard** option button. If you want to do a more thorough scan for errors, select the **Thorough** option.

   Because the **Thorough** option takes more time than the **Standard** option, we recommend you normally use the **Standard** option and do a **Thorough** check at least once a month.

4. If you selected **Standard** and you want to change the settings ScanDisk uses when it checks files and folders, click on the **Advanced** button, select the options in the ScanDisk Advanced Options window, then click on the **OK** button to close the window.

If you selected **Thorough** and want to change the settings ScanDisk uses when it checks the disk's surface, click on the **Options** button, select the options from the Surface Scan Options window, then click on the **OK** button to close the window.

5. If you want ScanDisk to automatically fix any errors it finds, select the **Automatically fix errors** option in the ScanDisk window.
6. Click on the **Start** button in the ScanDisk window.

   When the scan is complete, the ScanDisk Results window opens giving you details of the scanning operation.
7. If you want to scan another drive, click on the **Close** button to return to the ScanDisk window, select another drive, then go to Step 6.
8. When you are finished using ScanDisk, click on **Close**.

Using Check Disk

Windows NT provides the Check Disk utility to maintain the hard drive. Check disk enables you to check the drive for errors, fix file system errors, and attempt to recover bad sectors on the drive.

Use Check Disk from once a week to once a month, depending on how often you use your computer. Also use Check Disk whenever you have any hard drive problems.

To use Check Disk

1. Right-click **Start** and then click **Explore**.
2. In the Windows NT Explorer window, right-click the drive you want to check. You can only check one drive at a time.
3. Click **Properties**.
4. Click the **Tools** tab.
5. Click **Check Now** in the Error-checking dialog box.

6. Check **Scan for and attempt recovery of bad sectors** to scan the entire hard drive.

7. Click **Start**. If the scan finds bad sectors, a screen message notifies you.

Using Disk Defragmenter

The Disk Defragmenter program that comes with Windows 95 helps maintain the integrity of your hard drive by rearranging files so that unused space on your hard drive is not scattered around the drive, but is contained in one contiguous area on the disk. You may notice, after running Disk Defragmenter, that your programs run a little faster and more efficiently. That is because the hard drive head can go directly to the data it needs instead of skipping around to different places on the disk to find pieces of data.

We suggest you run Disk Defragmenter at least once a week to once a month, depending on how much you use your system.

To run Disk Defragmenter

1. Click on the **Start** button, then follow the popup menus through **Programs**, then **Accessories**, and then **System Tools**. Then select **Disk Defragmenter.**

   A dialog box opens asking you to select a drive to defragment.

2. Select the drive from the pull-down menu, then click **OK**.

   A dialog box opens showing the progress of the defragmentation. When defragmentation is complete, a dialog box opens and asks you if you want to quit the Disk Defragmenter program.

3. If you are finished defragmenting the drives in your system, click **Yes**.

   If you have more drives to defragment, click **No** and return to Step 2.

Protecting against viruses

A virus is a program written with malicious intent for the sole purpose of creating havoc in a computer system. It attaches itself to executable files or boot sectors, so it can replicate and spread. Some viruses may only cause your system to beep or display messages or images on the screen. Other viruses are highly destructive and corrupt or erase the contents of your files or diskettes. To be safe, never assume any virus is harmless.

Viruses spread through direct contact with executable programs or boot sectors. Diskettes used in a contaminated system can get a virus and transfer the virus when used in another system. A virus can also spread through programs downloaded from bulletin boards or the Internet.

To protect your system against viruses

- Obtain an anti-virus program and scan the system regularly.
- Make backup copies of all files and write-protect the disks.
- Obtain all software from reputable sources and always scan new software for any viruses prior to installing files.

If you suspect your system has been infected, find and remove the viruses immediately using an anti-virus program. Next, turn off your system and leave it off for at least 15 seconds before turning it back on. This is the only way to ensure the virus does not remain in your system RAM.

Cleaning your system

Your system and its components need to be cleaned occasionally. The following sections contain information about caring for the various parts of your system.

Cleaning the mouse

If the mouse pointer on the screen moves erratically when you move the mouse, dirt is probably on the rollers inside the mouse.

To clean the mouse

1. Shut down the system.
2. Turn your mouse upside down and remove the mouse ball cover.
3. Cup your hand under the mouse, then turn your mouse right-side up. The gray mouse-ball should drop into your hand. If it doesn't, gently shake the mouse until the ball drops out of the socket.
4. Once the mouse ball is free, use adhesive tape to pick up any dust or lint on its surface and wipe away dirt or lint inside the mouse-ball socket. You can also blow into the socket to remove dirt and lint. If foreign matter is trapped inside the socket or on the rollers, use a cotton swab dipped in isopropyl alcohol to loosen it. Allow surfaces to dry completely after cleaning.
5. Return the mouse ball to the socket and replace the cover, then restart the system.

Cleaning the keyboard

Occasionally you should clean the keyboard to free it of dust and lint particles trapped under the keys. The easiest way to do this is to blow trapped dirt from under the keys using an aerosol can of air with a narrow, straw-like extension.

If you spill liquid on the keyboard, shut down the computer and disconnect the keyboard. Turn the keyboard upside down to allow the liquid to drain out overnight before trying to use it again. If it fails to work after draining, contact Technical Support. Sticky liquids may cause residual problems even after drying and may require the replacement of the keyboard.

Cleaning the monitor screen

Use a soft cloth and window cleaner to clean the monitor screen. Squirt a little cleaner on the cloth (never directly on the screen), and wipe the screen with the cloth.

Cleaning the computer and monitor cases

Always shut down the system and other peripherals before cleaning any components.

Use a damp, lint-free cloth to clean the computer case, monitor case, keyboard, speakers, and other parts of your system. Avoid abrasive or solvent cleaners because they can damage the finish on your components.

Appendix

Acronyms and abbreviations

AC - Alternating current

ACPI - Advanced Configuration & Power Interface

APIC - Advanced programmable interrupt controller

ASCII - American standard code for information interchange

ASIC - Application specific integrated circuit

ATAPI - AT advanced peripheral interface

BIOS - Basic input/output system

BIST - Basic integrity self-test

CD - Compact disc

CD-ROM - Compact disc, read-only memory

CHS - Cylinder, head, sector

CMOS - Complementary metal-oxide semiconductor

CPU - Central processing unit

DBE - Double bit errors

DIMM - Dual inline memory module

DMA - Direct memory access

DMI - Desktop management interface

DRAM - Dynamic random access memory

ECC - Error correcting code

ECP - Enhanced capabilities port

EDO - Extended data output

EMC - Electro-magnetic compatibility

EMI - Electro-magnetic interference

EPP - Expanded parallel port

ESD - Electro-static discharge

FAT - File allocation table

GB - Gigabyte

IDE - Integrated drive electronics

I/O - Input/output

IRQ - Interrupt request line

ISA - Industry standard architecture

KB - Kilobyte

LAN - Local area network

LBA - Logical block addressing

LED - Light-emitting diode

LVD - Low voltage differential

MB - Megabyte

MBE - Multiple bit error

Mbps - Megabits per second

MIDI - Musical instrument digital interface

MHz - Megahertz

MS-DOS - Microsoft disk operating system

NMI - Non-maskable interrupt

NTFS - NT file system

NVRAM - Non-volatile random-access memory

OS - Operating system

PCI - Peripheral component interconnect

PIC - Programmable interrupt controller

PIO - Paged input/output

PnP - Plug and play

POST - Power-on self-test

PS/2 - Personal System/2

RAID - Redundant array of inexpensive drives

RAM - Random-access memory

RMA - Return material authorization

ROM - Read-only memory

rpm - Revolutions per minute

RTC - Real-time clock

SBE - Single bit error

SCA - Single connector attachment

SCI - Signal control interrupt

SCSI - Small computer system interface

SDRAM - Synchronous dynamic random access memory

SE - Single-ended

SEC - Single edge contact

SMI - System management interrupt

SMM - Server management module

SMP - Symmetrical multiple processor

SVGA - Super video graphics array

TCP/IP - Transmission control protocol/Internet protocol

UPS - Uninterruptable power supply

USB - Universal serial bus

V - Volt

VAC - Volts alternating current

VGA - Video graphics array

VRM - Voltage regulator module

W - Watt

Terms and definitions

This list of terms should help you get acquainted with terms used in your computer's documentation and in your system software.

Applications - Software installed on your system. Sometimes called *programs*.

BIOS - Basic input/output system. The BIOS is software that is independent of any operating system. It enables the computer to communicate with the monitor, keyboard, and other peripheral devices without using programs on the hard disk.

The BIOS on your computer is flash BIOS, which means that is has been recorded on a memory chip that can be updated if needed.

Boot - To load the first software program (usually the operating system) that starts your computer. To perform a cold (or hard) boot, you turn the computer on when it is off. To perform a warm (or soft) boot, you reset the computer when it is already turned on.

Boot disk - A disk containing operating system programs required to start your computer. A boot disk can be a diskette, hard drive, or CD.

Byte - The basic unit of measure for computer memory. A character, such as a letter of the alphabet, uses one byte of memory. Each byte is made up of eight bits. Computer memory is often measured in kilobytes (1,024 bytes) or megabytes (1,048,576 bytes).

Cache memory - Cache is very fast memory that can be located in the processor. Cache reduces the average time required for the processor to get the data it needs from the main memory by storing recently accessed data in the cache.

CMOS memory - Complementary metal oxide semiconductor memory. CMOS memory is memory that is retained even when the computer is turned off. The Setup program settings and other parameters are maintained in CMOS memory.

Default - The option that the software or system uses when you have not made a choice yourself.

Disc - A compact disc (CD).

Disk - The device used by the computer to store and retrieve information. Disk can refer to a diskette or a hard disk.

Diskette - A removable disk, also called a floppy.

Hard drive - The drive installed inside your computer that stores all your system and data files. Depending on its configuration, the computer may have more than one hard drive. Each drive is assigned its own drive letter. If you have only one drive, its drive letter is C, and it is often called "the C drive."

I/O - Input/output. Refers to devices, such as printers, whose purpose is to enter data into a computer or extract data from a computer. An I/O device is accessed through an I/O address: a location in memory reserved for the device to exchange information between itself and the rest of the computer.

IRQ - Interrupt request line. The IRQ is a hardware line that a device uses to signal the processor when the device needs the processor's services. The number of IRQs is limited by industry standards.

Operating system - A program that supervises the computer's operation, including handling I/O, networking and connectivity, and device drivers.

Path - A sequence of information that directs the system to the file it needs. For example, **c:\windows\bubbles.bmp** is the path to a graphics file on your system. The **c:** tells the system it is on the C hard drive, the **\windows** tells the system it is in the windows folder, and **bubbles.bmp** is the file.

Pixel - A pixel is an individual dot in a graphic displayed on your computer. Pixels are so close together that they look as though they are connected.

POST - Power-on self-test. POST tests your computer's components whenever you turn on the computer.

Programs - Software installed on your system. Programs are sometimes called *applications*.

RAM - Random access memory. RAM is the computer's system memory. You can write to and read from RAM. Information stored in RAM is temporary and is erased when the computer is turned off.

Refresh rate - The refresh rate is the rate at which the image on the monitor screen is rewritten to the screen. A fast refresh rate helps keep the image from flickering.

Resolution - The resolution is the sharpness or clarity of the image on the monitor screen. Resolution is measured by the number of pixels the screen can display. For example, a resolution of 800x600 means that the screen can display 800 pixels in a row and can display 600 rows. The more pixels displayed, the higher the resolution and the clearer the images.

ROM - Read-only memory. Permanent computer memory dedicated to a particular function. For example, the instructions for starting the computer when you first turn on power are contained in ROM. You cannot write to ROM.

Regulatory compliance statements

FCC Notice

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

This equipment has been tested and found to comply with the limits of a Class A digital device. The accessories associated with this equipment are as follows:

- Shielded video cable
- Shielded power cord

These accessories are required to be used in order to ensure compliance with FCC rules.

American Users

Caution!

The Federal Communications Commission warns users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Notice

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Canadian Users:

Attention!

Couper le courant avant l'entretien.

CE Notice

European Users:

This Information Technology Equipment has been tested and found to comply with the following European directives:

[i]EMC Directive 89/336/EEC amending directive 92/31/EEC & 93/68/EEC as per

EN 55022:1995, Radiated Emission Class A

EN 55022:1995, Conducted Emission Class A

-EN50082-1:1997 according to

EN 61000-4-2:1995

EN 61000-4-3:1996

EN 61000-4-4:1988 or IEC 801-4:1998

EN 61000-4-5:1995

EN 61000-4-6: 1996

EN 61000-4-8: 1993

EN 61000-4-11: 1994

[ii]Low Voltage Directive (Safety) 73/23/EEC as per EN 60950: 1992, A1, A2, A3, A4 and A11.

VCCI Notice

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective action.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Japanese Users:

Australia/New Zealand Notice

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Spectrum Management Agency.

Australian and New Zealand Users:

N-93

Caution!

Disconnect power before servicing.

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