

About the Power Mac G4 Cube

Includes setup and expansion information for Power Mac G4 Cube computers

Apple Computer, Inc.

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Setting Up

Congratulations on purchasing your new Power Mac G4 Cube—an elegant, compact, and professional solution to desktop computing. This chapter contains instructions for setting up your computer and display.

Positioning the Computer and Display

If your monitor is heavy, be sure to use correct lifting techniques when positioning it. Position the computer and display so that

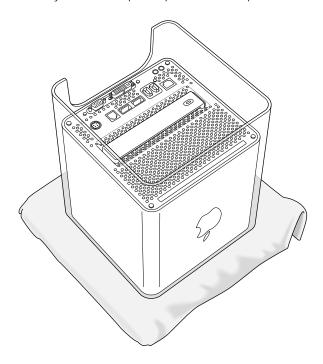
- they are on sturdy, flat surfaces
- nothing is on top of the computer or obstructs air flow through the top or rear of the enclosure, or through the vents of the display
- the computer's DVD disc drive is not obstructed

Important The only way to shut off power completely to your computer or display is to disconnect their power plugs from the power source. Make sure the power cord for your computer or display is within easy reach so that you can unplug it quickly if necessary.

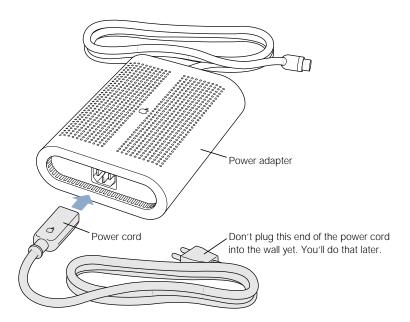
Setting Up Your Computer

Your computer ports and connectors are accessible from the bottom of the computer.

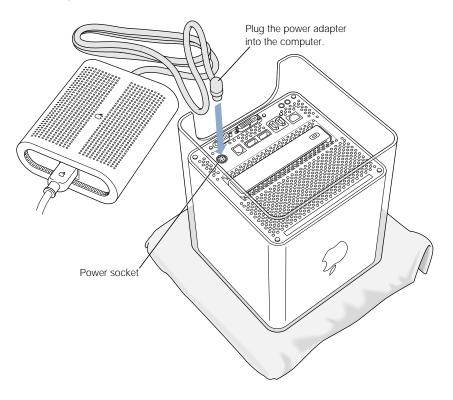
1 Carefully turn the computer upside-down and place it on a soft cloth.



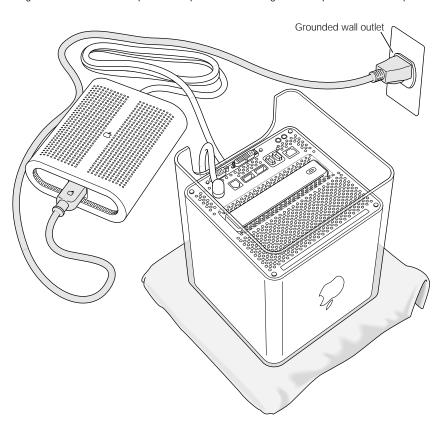
- Plug one end of the power cord into the power adapter.
 - **warning** Use only the power adapter that came with your computer.



3 Plug the power adapter plug into the power socket (marked with the icon ---) on the bottom of the computer.

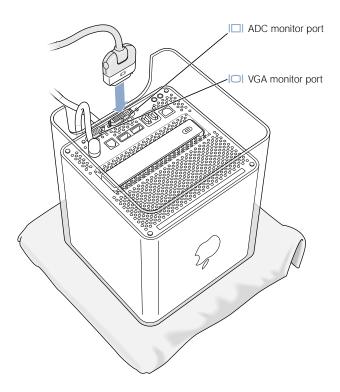


Plug the other end of the power adapter cord into a grounded power outlet or power strip.



5 Connect your monitor cables according to the following illustration:

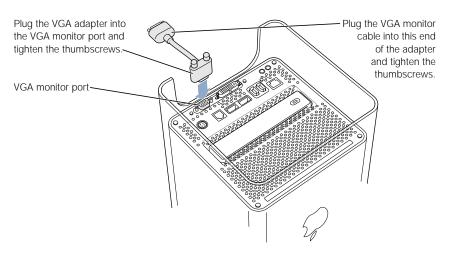
Important Depending on your monitor, you may have one or more cables to connect. Check the instructions that came with the monitor for further setup information.



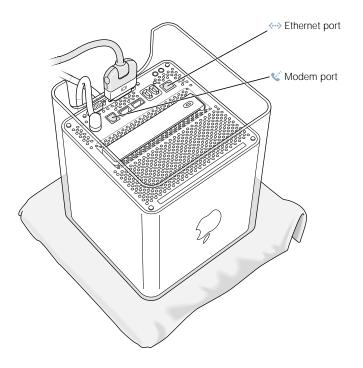
warning Be sure your computer is turned off before connecting your monitor. When lifting the computer, be careful not to turn the computer on accidentally. Do not connect or disconnect your monitor when the computer is turned on.

If your monitor has an Apple Display Connector (ADC), connect it to the ADC port (III). You can bend the connector at an angle to fit underneath the computer.

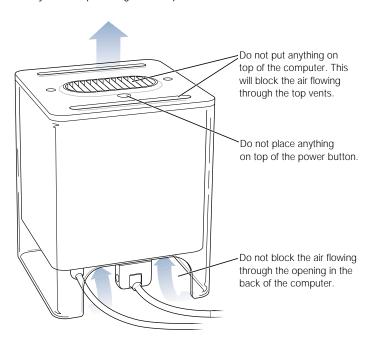
If your monitor has a VGA connector, attach the VGA-to-VGA adapter that came with your computer to the VGA port and then connect your monitor cable to the adapter.



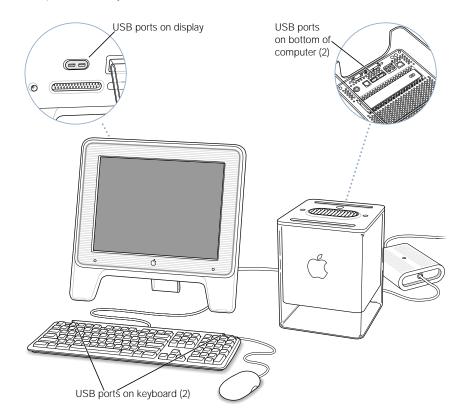
If required, connect your computer to your Ethernet network and connect your modem to a phone line.



Turn your computer right side up.

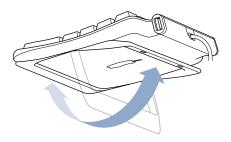


Connect the keyboard cable to a USB port on your monitor, and plug the mouse cable into a USB port on the keyboard.



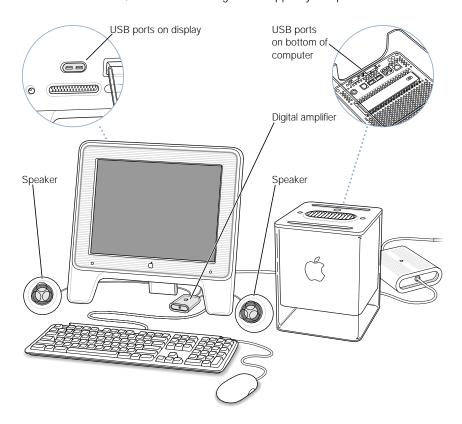
■ If your monitor doesn't have a USB port, connect the keyboard USB cable to a USB port on the bottom of your computer.

If you wish, raise the keyboard by lifting it and flipping the foot toward the back.

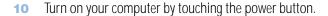


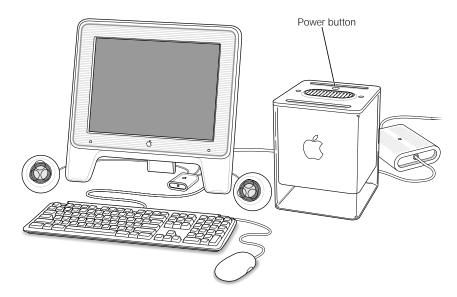
9 Connect your computer speakers.

Important Your computer speakers have special power requirements that are supported by the USB ports on your computer and by the USB ports on Apple displays that have the ADC connector. Do not connect your speakers to other USB devices, such as your keyboard or external USB hubs, which are not designed to support your speakers.



- If you have an Apple Cinema Display or Apple Studio Display with an ADC connector, connect your speakers to a USB port on the back of the display.
- If you have a different type of monitor, connect your speakers to a USB port on the computer.





With some Apple monitors, you can also turn on the computer by pressing or touching the monitor power button.

Problems?

If you don't see anything on your screen or you think your computer did not start up properly, check these items:

- Is the power adapter plugged into a power source? If it is plugged into a power strip, is the power strip turned on? Is the power adapter properly plugged into the computer?
- Are the keyboard and monitor cables connected correctly?
- Is the power button lit on the computer and on the monitor? If not, the computer or monitor aren't receiving power. If the power button on your computer is pulsing, it means the computer is in sleep. Touch the power button or any key to wake it up.
- Are the brightness and contrast controls on the monitor adjusted correctly? If your monitor has brightness and contrast controls, try adjusting them.
- Try restarting your computer. Touch the power button on the computer for approximately
 5 seconds until the computer turns off. Touch it again to turn the computer on.
- If you see a blinking question mark on the screen or a series of flashes from the computer or display power buttons when you turn on the computer, see Chapter 5, "Troubleshooting," on page 71.

When You're Finished Using Your Computer

To turn off your computer:

Choose Shut Down from the Special menu.

Important Do not turn off the computer by turning off the switch on a power strip or by pulling the power adapter plug (unless you can't turn off the computer any other way). Your files or system software could be damaged if your computer is not shut down properly.

Adjusting Your Monitor

Use the Monitors control panel to adjust the settings for your monitor. For information about troubleshooting your display, see "Problems With Your Display" on page 73. For information about maintaining your display, see "Maintaining Your Display" on page 83. Additional information about using your monitor is available in Mac Help.

To register a new Apple Studio Display or Apple Cinema Display with Apple, go to the Apple World Wide Web site: www.apple.com/register

What's Next?

- For an overview of your computer's features, see Chapter 2, "Getting to Know Your Computer," on page 19.
- For more information about using your modem, connecting to a network, or using the computer's other hardware features, see Chapter 3, "Using Your Computer," on page 41.
- For information about installing memory, an AirPort wireless networking card, or changing the computer's battery, see Chapter 4, "Working Inside Your Computer," on page 59.

CHAPTER

Getting to Know Your Computer

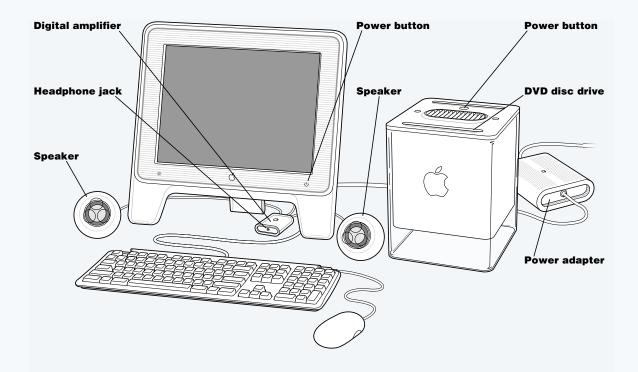
If you're eager to get started and want to try out a few things, this chapter is for you. It provides an overview of your computer's important hardware and software features.

Want to create your own video masterpieces? Take a look at iMovie and find out how you can edit video on your computer. Learn how QuickTime can help you view live video broadcasts from the World Wide Web. And take advantage of the Internet to research information, update your software, shop, browse the Web for fun, or just get help when you need it.

Here you'll find a great selection of your computer's features presented and briefly explained. Take a test run and see what your computer can do. For more information about a specific feature, see Chapter 3, "Using Your Computer," on page 41, and the online explanations in Mac Help (see page 40).

Note: Pictures showing the latest software features may appear slightly different on your screen.

Your Computer at a Glance



DVD disc drive

Use DVD discs to view DVD movies, install software, and access information. A DVD-ROM drive works with CD-ROM and DVD-ROM discs, DVD-Video discs, and Photo CDs. It also plays standard audio discs.

Power button/Power-on light

Touch this button to turn on the computer or wake it from sleep. When the computer is on, touching the power button puts the computer to sleep. A steady light indicates that the computer is on. A pulsing light indicates the computer is in sleep.

With some Apple displays, you can also touch or press the monitor power button to turn the computer on or off, or put it to sleep.

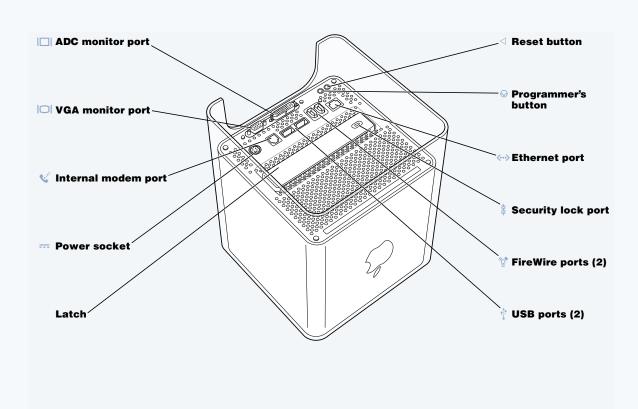
Apple Pro Keyboard and Apple Pro Mouse

Connect your Apple Pro Keyboard to a USB port on your display or computer. Connect your Apple Pro Mouse to one of the USB ports on the keyboard. For more information about your keyboard and mouse, see Chapter 3, "Using Your Computer."

Speakers and digital amplifier

Connect your speakers and digital amplifier to a USB port on an Apple Cinema Display or Apple Studio Display that has an ADC connector, or connect them to a USB port on your computer. Your speakers have special power requirements that other USB devices may not support, so don't connect the speakers to USB ports on other devices. You can also connect headphones to the headphone jack on the digital amplifier. For more information about your speakers and digital amplifier, see "Using Your Computer Speakers" on page 44.

Your Computer's Ports and Connectors



FireWire ports

Connect your Macintosh to FireWire devices, including digital video cameras, scanners, hard disk drives, and more. You can connect up to 63 devices and FireWire provides a high-speed method of data transfer between them all.

⟨···⟩ 10/100 twisted-pair Ethernet port

Connect your Macintosh to a high-speed Ethernet network.

Connect your Macintosh to USB devices, such as keyboards, mouse devices, printers, scanners, speakers, USB hubs, and more.

Latch

Releases the computer core so you can remove it from the enclosure. Push down on the latch to release it, then use the latch to pull the core from the enclosure. Never carry your computer by the latch. You can also attach a security lock to the security lock port to prevent others from moving or opening the computer.

Internal modem port

Connect a phone cord to the internal modem.

--- Power socket

Connect to the computer's power adapter cord.

| Monitor ports

Connect your Macintosh to Apple monitors that use the Apple Display Connector (ADC) or to standard monitors that have a video graphics array (VGA) connector.

Programmer's button

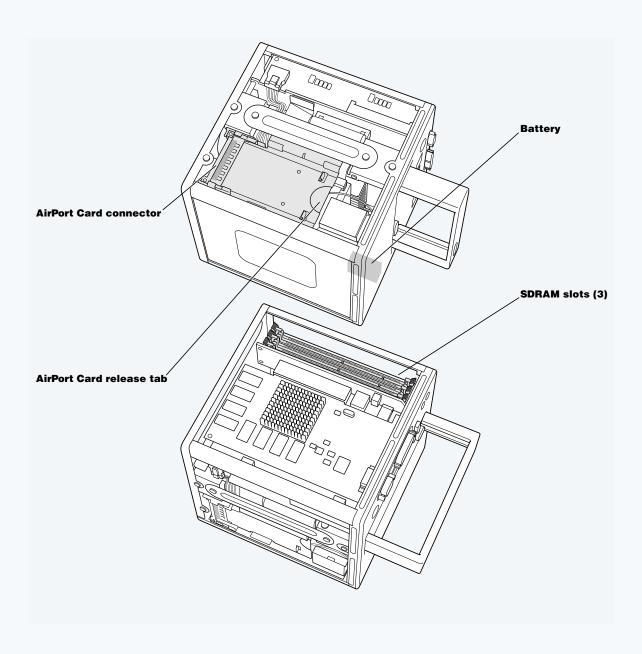
This button interrupts the normal operation of the computer's software. You will use this button rarely or never, only when firmware updates are required for your system.

Directions for using this button are included in the firmware update documentation.

Reset button

This button forces the computer to restart. Use the reset button only when you cannot restart your computer with any of the recommended methods, such as choosing Restart from the Special menu. For more information about when to use the reset button, see Chapter 5, "Troubleshooting," on page 71.

Inside Your Computer—Internal Expansion Options



SDRAM slots

You can install additional memory in your computer by inserting up to 3 DRAM DIMMs in the memory slots. You can expand your computer's memory up to 1536 MB.

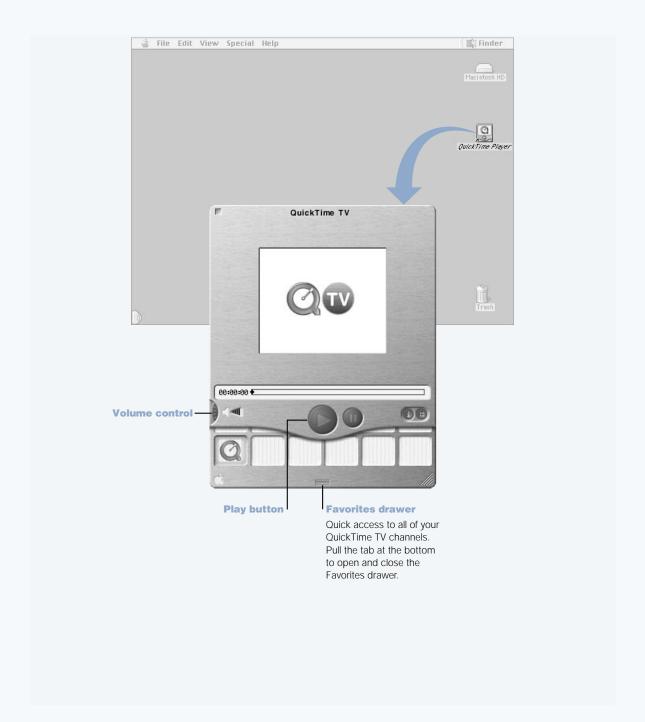
AirPort Card connector

Connects an AirPort Card, which allows your computer to communicate with a wireless network.

Battery

Your computer uses a battery that you rarely replace. If you find that your computer is having trouble starting up, or that the system date and time are frequently incorrect, you may need to replace the battery. For more information, see "Replacing the Battery" on page 67.

QuickTime—Audio and Video on the Internet



What You Can Do

In addition to being able to play video and music files on your Mac, with QuickTime you can watch live and recorded Internet broadcasts.

To Get Started

- 1 Connect to the Internet.
- 2 Open QuickTime Player.
- 3 Open the Favorites drawer.
- 4 Select a channel.

Tips and Tricks

Add additional QuickTime TV channels

Go to www.apple.com/quicktime and click the QuickTime TV link. There you will find all of the available QuickTime channels. You can watch a QuickTime TV channel and with one click add it to the Favorites drawer in QuickTime Player.

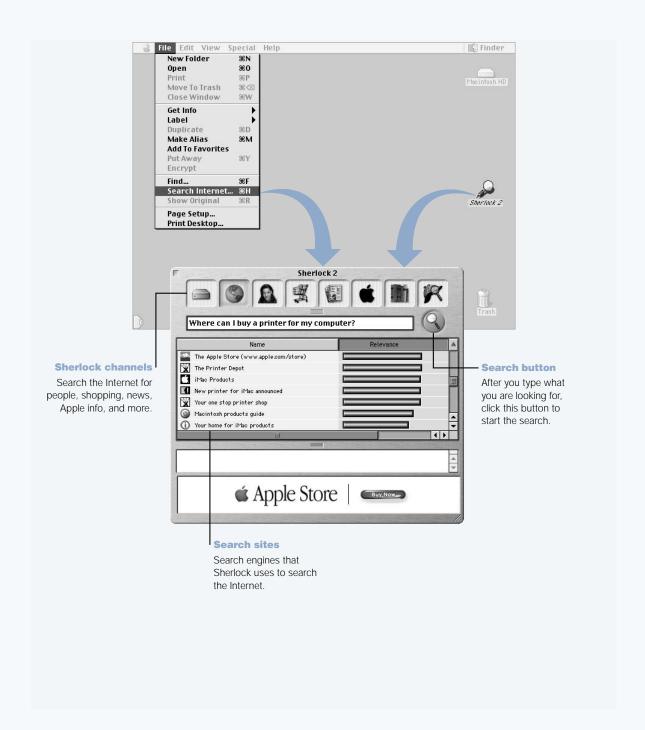
Upgrade to QuickTime Pro to do the following:

- Play back full-screen video and resize movies.
- Create streaming movies.
- Work with more than 30 audio, video, and image formats, including Flash.
- Create, open, edit, and save movies and audio, as easily as copying and pasting.

To Learn More

Internet video is just one of the things you can do with QuickTime. To learn more, start with QuickTime Help. To download additional channels, watch the latest movie trailers, and find information on setting up your own Internet streaming server, go to the QuickTime Web site at www.apple.com/quicktime

Sherlock 2—Your Internet Search Detective



What You Can Do

Sherlock 2 is your search detective and personal shopper on the Internet. It provides an easy way to find people, news, and just about anything. Shop for books and music and search auction sites, find the best prices—even check product availability.

To Get Started

- Connect to the Internet.
- 2 Choose Search Internet from the File menu or double-click the Sherlock icon on the desktop.
- 3 Select a Sherlock channel.
- 4 Type what you are looking for and click the Search button.

Tips and Tricks

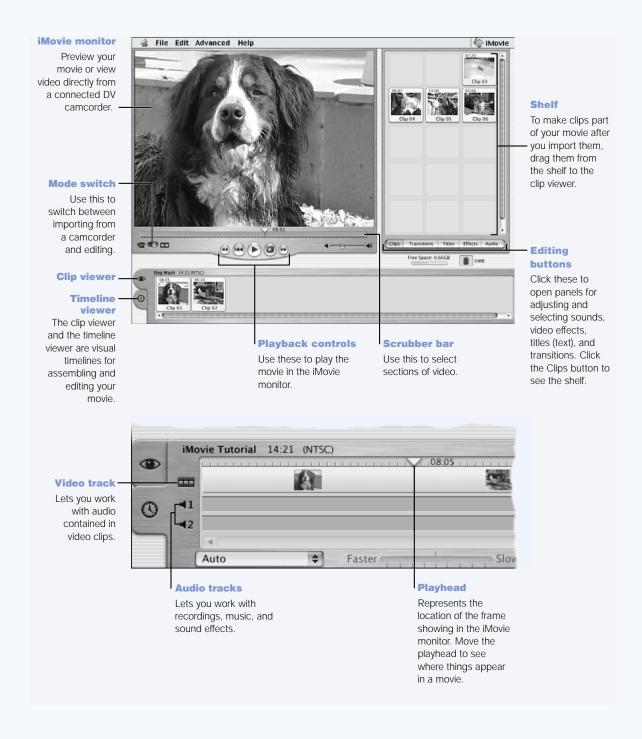
Create your own customized Sherlock search channel

- 1 Choose New Channel from the Channels menu.
- 2 Select a name, channel type, and icon.
- 3 Download Sherlock plug-ins and drag them into the search site list. Or hold down the Option key and drag plug-ins from the other search lists to the icon of your new channel.

To Learn More

To learn more about what you can do with Sherlock, open Mac Help and search for "Sherlock." To download additional search plug-ins and find out how you can create your own Sherlock plug-in, go to the Sherlock Web site at www.apple.com/sherlock

iMovie 2—Create and Edit Your Own Digital Movies



What You Can Do

iMovie is an easy-to-use digital video editing software application. With iMovie and a digital video camcorder, you can create and edit your own movies. Import video from the camera, edit clips, add transitions, titles, sound effects, and music. Then copy the movie to a camcorder tape or create a QuickTime movie.

To Get Started

- 1 Shoot your video, connect the camera to your computer's FireWire port, and then open iMovie.
- Click the Import button to import movie clips to the shelf, then add them to your movie by dragging them to the clip viewer.
- 3 Assemble and edit your movie in the clip viewer and timeline viewer.
- 4 Add transitions, titles, sound, and music.
- 5 When you are finished, choose Export from the File menu.

Tips and Tricks

Share your desktop iMovie with your friends and family

Export your movie as a QuickTime Web movie and then copy the movie to your iDisk or use HomePage to create your own iMovie theater so that others can view your movie on the Internet.

To Learn More

For more information on using iMovie, see the iMovie Tutorial or iMovie Help. For the latest on iMovie, including iMovie updates, additional plug-ins, and a list of compatible DV camcorders, go to the iMovie Web site at www.apple.com/imovie

iTools—Free Internet Services for Mac Users



Email

Get your own Mac.com email address. It's easy and free, and works with your favorite email clients.



KidSafe

KidSafe makes the Internet a safer place for your kids. KidSafe gives them access to more than 75,000 educator-approved Web sites and blocks all the rest.



iDisk

With your very own 20 megabyte storage space on Apple's Internet server, iDisk is the easy way to share files over the Internet. Using iDisk, you can easily share photos and movies, as well as import them into your own Web site.



HomePage

Build your own personal Web site in three easy steps. Create a birth announcement, résumé, or photo album, or set up your own iMovie theater. Apple will even host your Web site on its Internet server, so it's always there for the world to see.

What You Can Do

iTools is a new class of Internet services from Apple created exclusively for Mac users. With iTools, you can email your friends, make the Internet safer for your children, and share photos and movies. You can even create your own Web site.

To Get Started

- Connect to the Internet.
- 2 Go to www.apple.com
- 3 Click the iTools tab and then click the Free Sign Up button.

Tips and Tricks

Upload pictures to your iDisk to create custom iCards

You can send iCards with your own custom pictures. Save your images as GIF or JPEG files and then copy them to the Pictures folder on your iDisk. Your images will then appear as picture choices when you create an iCard in the Create Your Own section.

Start with a HomePage template to create your own Web page in minutes

HomePage has Web page templates that you can modify with your own text and images. For example, teachers can use the HomePage education templates to post recent class news, homework assignments, and other information for parents. You can also use the HomePage photo album and iMovie templates to share your pictures and movies easily with your friends and family.

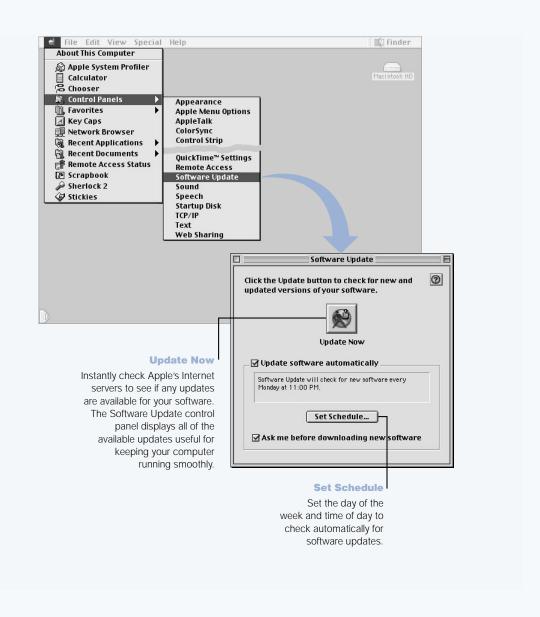
Create an alias of your iDisk for easy access

Instead of connecting to the Web manually to open your iDisk, you can select the icon of your iDisk and choose Make Alias from the File menu. Whenever you want to access your iDisk, double-click the alias and enter your password.

Use KidSafe in conjunction with the Multiple Users control panel

Use the Multiple Users control panel to set up your computer for your entire family to share. Now you can set up KidSafe for each of your children's accounts.

Auto Updating—Automatically Keep Your Mac on the Cutting Edge



What You Can Do

Auto updating uses the Internet to download (and even install) the latest updates, drivers, and other enhancements from Apple—automatically. You can even set your Mac to check Apple's server periodically and download and install updated software for you.

To Get Started

- Connect to the Internet.
- 2 Choose Control Panels from the Apple menu and then choose Software Updates from the submenu.
- 3 Click the Update Now button.
- 4 Select the software you want to update and then click Install.

Tips and Tricks

Adjust your Software Updates schedule

If you have an Internet connection that is always on, you can set a schedule for your computer so that it checks for software updates at a certain time on specific days of the week. If you have a dial-up connection and you are not connected, Software Updates will check the next time you connect.

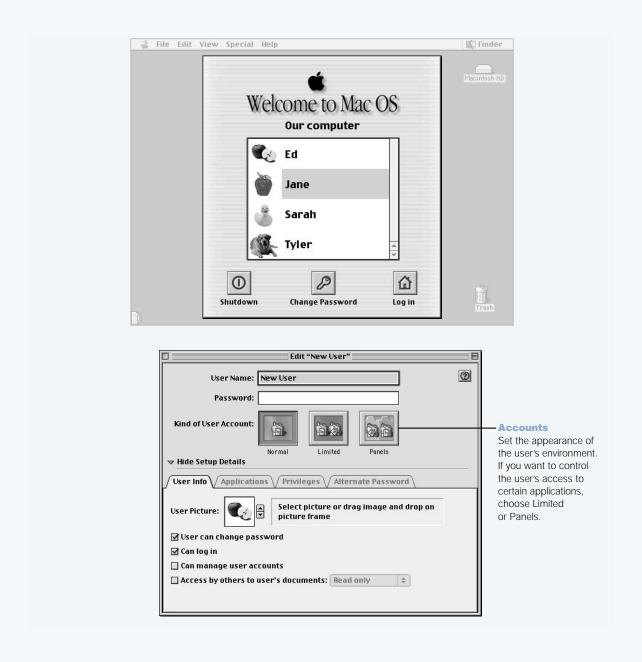
Install new software automatically

You can set up your Mac so that every week it checks for and installs the latest software. Set a schedule for your computer to check for software updates and deselect the "Ask me before downloading new software" checkbox.

To Learn More

For more information on using Software Updates, search for "Software Updates" in Mac Help. For the latest information on the Mac OS, go to the Mac OS Web site at www.apple.com/macos

Multiple Users—Turn One Mac Into Many



What You Can Do

With Multiple Users, you can allow up to 40 different users to share a single Mac with their own customized settings and private storage space. For example, users can set their own desktop picture, sort their views the way they like, bookmark favorite Web sites, and do many other things that create, in effect, a personalized Mac for each individual user. You can also specify how much access—and liberty to change things—each individual user can have.

To Get Started

- 1 Choose Control Panels from the Apple menu and then choose Multiple Users from the submenu.
- Turn Multiple User Accounts on.
- 3 Click the Options button to configure overall multiple user settings such as the Welcome message and other options.
- 4 Click the New User button.
- 5 Edit the user's information, access privileges, and applications.
- 6 Close the Multiple Users control panel.

Each time the computer starts up the login window appears. To go back to the login window after another user has already logged in, choose Log Out from the Special menu.

Tips and Tricks

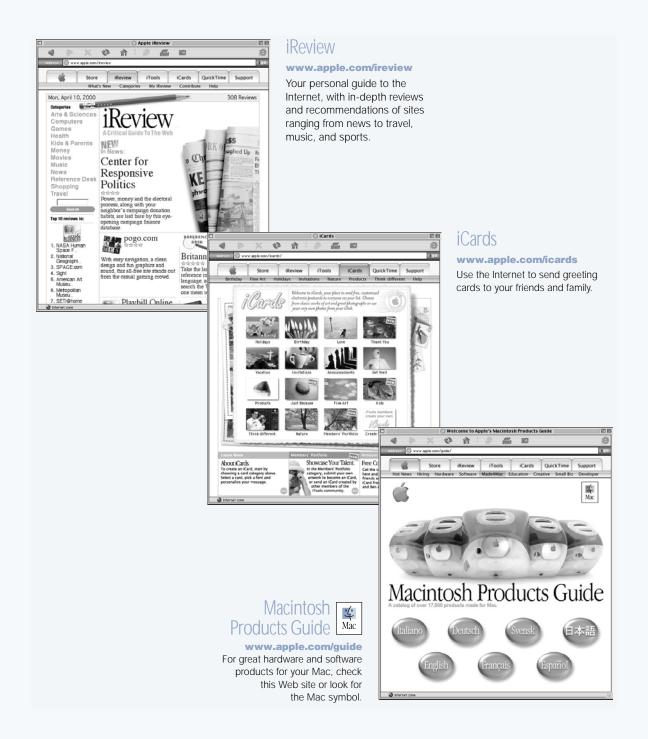
Create a voice print passphrase

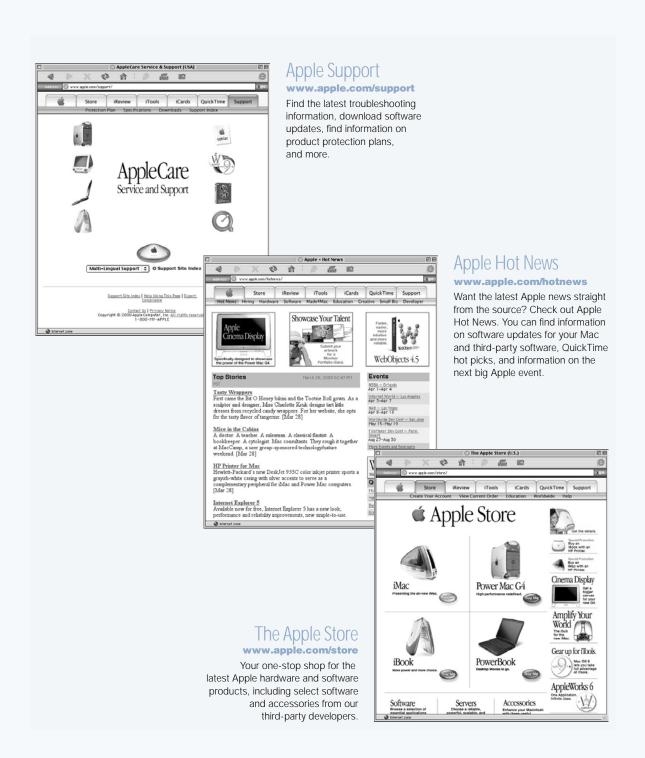
Record yourself speaking a phrase such as "My voice is my password." Your Mac stores your voice print for comparison. Later, when you want to log in by speaking your passphrase, your Mac analyzes the biometrics of your voice to make sure you are who you say you are.

To Learn More

For more information on setting up Multiple Users, including creating a voice print passphrase, search for "Multiple Users" in Mac Help. For the latest information on the Mac OS, go to the Mac OS Web site at www.apple.com/macos

Apple.com—Your Starting Place on the World Wide Web





Mac Help—Answers to All Your Macintosh Questions



C H A P T E R

Using Your Computer

This chapter provides explanations and procedures for using your computer. You'll find instructions for using the important features of your computer, including your keyboard and mouse, modem, FireWire, USB, networking, and more.

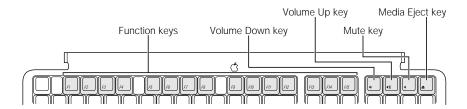
Explanations are provided for

- "Using Your Apple Pro Keyboard and Apple Pro Mouse" on page 42
- "Using Your Computer Speakers" on page 44
- "Using FireWire Devices" on page 48
- "Using Your DVD Drive" on page 50
- "Using Your Modem" on page 52
- "Connecting to an Ethernet Network" on page 53
- "Using AirPort Wireless Networking" on page 55
- "Putting the Computer to Sleep to Save Energy" on page 56
- "Transferring Information Between Two Apple Computers" on page 57

Using Your Apple Pro Keyboard and Apple Pro Mouse

You can quickly adjust settings such as volume or eject CD or DVD discs using the keyboard controls.

Your Apple Pro Keyboard has "hot" function keys that you can set up to open your frequently used applications or documents. For example, you can use hot function keys to open your Web browser, word processor, or favorite game. Once applications are open, you can use the hot function keys to switch quickly between them.



Assigning Hot Function Keys

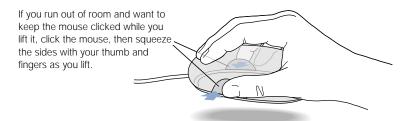
Assigning an application to a function key is simple. The first time you press one of the function keys, a dialog box appears that lets you assign any of the function keys to an application. After that, you can change function key assignments using the Keyboard control panel.

Using the Standard Function Keys

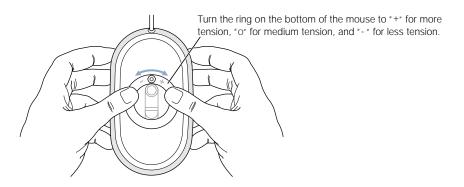
You can quickly change a key from a control or hot function key to a standard function key by pressing that key and the Fn key at the same time. You can also use the Keyboard control panel to reverse the keys so that the standard function keys are primary and the screen controls and hot function keys are secondary.

Using Your Apple Pro Mouse

To position the pointer using your mouse, move the mouse over any suitable surface such as your desktop, mouse pad, or other textured surface. (Some smooth, glassy surfaces provide less pointer control than others.) To click an object, press down once on the mouse body until you feel a click. To double-click an item, press down twice in quick succession. If you need to keep the mouse pressed down as you reposition the pointer, squeeze the two grips on the side of the mouse as you lift the mouse to reposition it.



You can adjust the feel of your mouse by turning the dial underneath. Turning the dial one direction makes the feel of clicking the mouse stiffer; turning it the other way makes clicking the mouse easier.

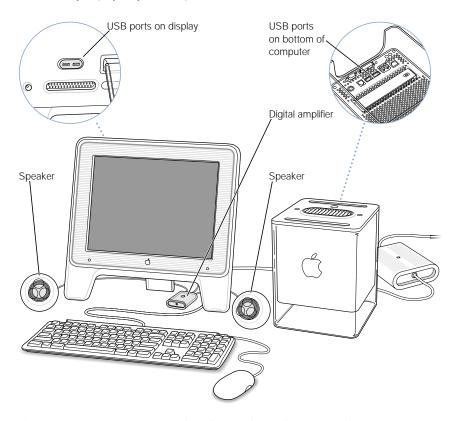


For More Information About Your Keyboard and Mouse

Additional information on configuring the keyboard controls and hot function keys is available in Mac Help. Choose Mac Help from the Help menu and search for "keyboard" or "mouse."

Using Your Computer Speakers

Your computer speakers can provide high-fidelity sound for all the music, games, and multimedia you play on your computer.



The USB ports on your computer have been enhanced to support the power requirements of your speakers. Be sure to connect your speakers to one of the computer USB ports. If you have an Apple Cinema Display or Apple Studio Display with an ADC connector, you can also connect the speakers to the USB ports on the display instead.

Important Do not connect your speakers to other USB devices, such as your keyboard or external USB hubs, that are not designed to support your speakers.

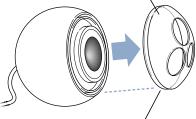
After connecting your speakers and starting up your computer, you can adjust the speakers' sound using the Sound control panel. You can adjust the volume of sound played through the speakers and balance their sound output individually.

You can also connect headphones to the headphone jack on the digital amplifier. You can adjust your headphone sound using the Sound control panel.

Using Your Speakers Without the Grille

For optimal sound fidelity, you can remove the protective grilles from the speaker fronts. Gently pull the grilles from the speakers and store them in a safe place. Be sure that your speakers are not exposed to foreign objects that might touch their inner mechanisms. Be sure to replace the grilles when moving your computer and speakers to a new location.

For optimal sound, remove the grille.



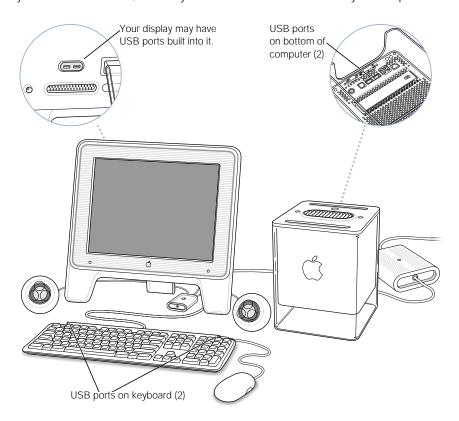
The grille fits on the speaker only one way. Align the notch on the bottom when you put it back on.

For More Information on USB Speakers

Additional information on USB speakers and the Sound control panel is available in Mac Help. Choose Mac Help from the Help menu and search for "USB" or "sound." You can also find information on Apple's USB Web site at www.apple.com/usb

Using USB Devices

Your computer comes with USB ports, which you use to connect many different types of external devices, including printers, digital cameras, game pads, joysticks, keyboards and mouse devices, and storage devices. USB makes it easy to connect external equipment. Once you connect the device, it is ready to use. You don't need to restart your computer.



To use a USB device with your computer, connect the device to the computer and install its software or configure your computer to work with the device once. From then on, your computer automatically loads the correct software whenever you attach the device.

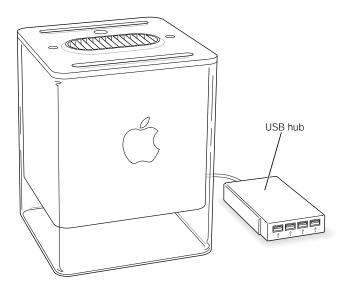
Note: Apple has already included software to work with many USB devices. In most cases you do not need to install the software that came with the device. If, when you connect a USB device, your computer cannot find the correct software, it asks you to search the Internet to find it.

Connecting Multiple USB Devices

Your computer has two USB ports built in. If you are using an Apple Studio Display or Apple Cinema Display with your computer, you have two additional USB ports to which you can connect your keyboard and speakers.

Important Do not attach your speakers to the USB ports on your keyboard or to an external USB hub. They are not designed to support your speakers. Plug your speakers into a USB port on your computer, or into the USB ports on an Apple Studio Display or Apple Cinema Display that has an ADC cable.

If you have more USB devices than you have available USB ports, purchase a USB hub. The USB hub connects to an open port on your computer and provides additional USB ports (usually four or seven).



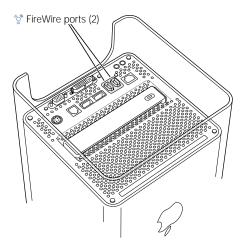
For More Information on USB

Additional information on USB is available in Mac Help. Choose Mac Help from the Help menu and search for "USB." You can also find information on Apple's USB Web site at www.apple.com/usb

For information on USB devices available for your computer, go to the Macintosh Products Guide at www.apple.com/guide

Using FireWire Devices

Your computer has two FireWire ports. FireWire is a high-speed data system that lets you easily connect and disconnect external devices—such as digital video (DV) cameras, printers, scanners, and hard disks. You can connect and disconnect FireWire devices without restarting your computer.



These are some of the things you can do with FireWire:

- Connect a digital video camera and capture or transfer high-quality video directly to your computer. Then you can use video-editing software such as iMovie to edit the video.
- Connect an external FireWire hard disk drive and use it to back up data or transfer files. A FireWire hard disk icon appears on your desktop immediately after you connect the drive to your computer. In addition, most FireWire hard disks get their power from the FireWire cable, so there is no need to carry around a power supply.
- If you have a problem with your computer that prevents you from starting up or you want to transfer files, you can use FireWire to connect your computer to another computer so that your computer will appear as an external hard disk on the other computer (a feature known as "FireWire target disk mode").

To use a FireWire device with your computer, connect the device to the computer and install any software that came with the device. Your computer automatically senses when you attach a new device.

To start up from a FireWire hard disk that has the Mac OS on it, use the Startup Disk control panel to select the FireWire hard disk as the startup drive. If your FireWire hard disk doesn't appear or can't be selected in the control panel, consult the FireWire hard disk vendor for updated software drivers.

FireWire Target Disk Mode

If you have a problem with your computer that prevents you from starting up or if you just want to transfer files between two computers, you can use FireWire to connect your computer to another computer and then have it appear as an external hard disk on the other computer.

Important The computer you want to connect your computer to must have FireWire version 2.3.3 or later installed. Use Apple System Profiler, available in the Apple menu, to check the version of FireWire installed. If you have an older version, check the Apple FireWire Web site at www.apple.com/firewire

To connect your computer in FireWire target disk mode, follow these steps:

- Use a FireWire cable to connect your computer to another FireWire-equipped computer.
- Start up your computer and immediately hold down the T key. Your computer display shows the FireWire disk mode indicator, and the computer internal hard disk icon appears on the desktop of the other computer.
- When you are finished transferring files, drag the computer hard disk icon to the Trash to unmount the drive.
- Press the power button on the monitor to shut your computer down and then disconnect the FireWire cable.

For More Information on FireWire

Additional information on FireWire, including setting up a network of FireWire devices, is available in Mac Help. Choose Mac Help from the Help menu, and search for "FireWire." You can also find information on Apple's FireWire Web site at www.apple.com/firewire

For information on the FireWire devices available for your computer, go to the Macintosh Products Guide at www.apple.com/guide

Using Your DVD Drive

You can install or run software from CD and DVD discs using the DVD drive. You can also use your DVD drive to play DVD movies, multimedia on CD-ROM discs, and music from audio CDs.

Note: If you have older software that comes on floppy disks, contact the software manufacturer to see if the software is available on a CD-ROM disc or purchase an external USB or FireWire floppy disk drive (such as an LS120/SuperDisk) for your computer from your Apple dealer or the Apple Store (www.apple.com/store).

Inserting Discs

To install or use programs from a CD or DVD disc, do the following:

 Place a disc in the slot, with the label of the disc facing you, and push gently until the drive draws the disc in.

When the icon for the disc appears on the screen, the disc is ready for use.



Ejecting a Disc

You eject a disc by dragging the disc icon to the Trash, or by pressing the Media Eject key on your keyboard.

If you are unable to eject a disc, hold down the mouse and restart your computer. When the computer restarts, the disc is ejected.

Playing DVD and Audio Discs

You can use the DVD drive to play DVD-Video discs on your computer. Insert the DVD disc and then open Apple DVD Player (in the Applications folder on your hard disk). To listen to a standard audio CD, use the AppleCD Audio Player program in the Applications folder. You can also use the AutoPlay section of the QuickTime Settings control panel or the Play portion of the Control Strip to control audio CD playback.

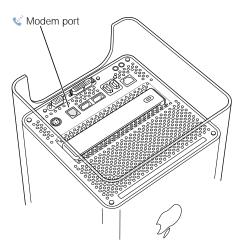
For More Information on Your DVD Drive

For instructions on using Apple DVD Player, open the player and then choose Apple DVD Player Help from the Help menu. Additional information on using CD or DVD discs is available in Mac Help. Choose Mac Help from the Help menu and search for "discs."

Using Your Modem

Your computer comes with an Apple 56K internal modem installed. To connect the Apple 56K internal modem, use the phone cord that came in the box with the computer.

Plug one end of the phone cord into the modem port on the bottom of the computer and the other end into a standard RJ-11 telephone wall jack.



Important Make sure you connect the internal modem to an analog phone line—the kind used typically in homes. The modem will not work with a digital phone line.

More information about the internal modem is available in Mac Help (in the Help menu).

warning Disconnect your modem from the phone jack during lightning or thunder storms. This will prevent a destructive voltage overload from damaging the modem.

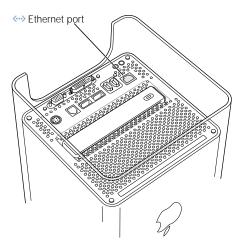
Using an External USB Modem

To connect an external USB modem, use a USB cable to connect the modem to a free USB port on the keyboard, computer, USB monitor, or USB hub.

Check the documentation that came with the modem to see if it needs to be plugged into a power outlet. Also look for instructions about installing modem software and connecting the modem to a telephone line.

Connecting to an Ethernet Network

Your computer comes with built-in 10/100 megabit per second (Mbps) twisted-pair Ethernet networking capability, which you can use to connect to a network.



Connecting to a network gives you access to other computers. You may be able to store and retrieve information, use network printers, modems, and electronic mail, or connect to the Internet. You can also use Ethernet to share files between two computers or set up a small network.

If you're connecting to an existing network, you may be able to get information about the network and the software you need to use it from a network administrator who oversees its operation. Identify your organization's network administrator before you begin.

Follow these guidelines when selecting a cable for your network:

Type of twisted-pair Ethernet	Use twisted-pair cable types
10 Mbit	Category 3, 5, or 6
100 Mbit	Category 5 or 6

For more information about using your computer on a network or setting up a network, see Mac Help (in the Help menu).

Connecting to a Twisted-Pair Ethernet Network

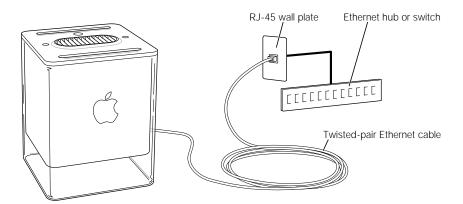
You can connect directly to a 10/100 twisted-pair Ethernet network.

You can also connect your computer to an Ethernet network that uses thin coaxial cables. To do this, you need an RJ-45—to—Thin Coax adapter (available from other manufacturers).

See your Apple-authorized dealer for more information on Ethernet media adapters.

To connect your Macintosh to a centralized 10/100 twisted-pair Ethernet network, follow these steps:

- 1 Plug one end of an RJ-45 twisted-pair cable into the Ethernet port on your Macintosh.
- Plug the other end of the cord into an RJ-45 wall outlet or external hub that is connected to a twisted-pair Ethernet network.



After you start up the computer, you need to configure the software for your network connection. Your network administrator can provide the necessary information. You can also get help configuring your network software using Mac Help (in the Help menu).

For More Information on Using Ethernet

Additional information, including setting up an Ethernet network or transferring files using Ethernet, is available in Mac Help. Choose Mac Help from the Help menu and search for "Ethernet" or "network."

For information on networking products you can use with your computer, go to the Macintosh Products Guide at www.apple.com/guide

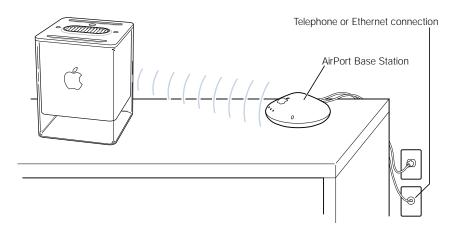
Using AirPort Wireless Networking

AirPort offers an easy and affordable way to provide wireless Internet access anywhere in the home, at work, or in the classroom. Instead of using traditional cables, AirPort uses wireless local area network (LAN) technology to provide wireless communication between multiple computers. Through a wireless network you can set up access to the Internet, transfer files, play multiplayer games, and more.

Your computer is AirPort-ready. The only thing you need to add is an AirPort Card. You install the AirPort Card in a slot inside the computer and connect it directly to the end of a built-in antenna cable.

How AirPort Provides Wireless Internet Access

With AirPort, you set up a wireless connection to a device known as a *base station*, which has a physical connection to the Internet. AirPort technology works like a cordless telephone. The handset of the cordless phone makes a wireless connection to the base, which is connected to the telephone line. Similarly, your computer makes a wireless connection to the base station, which is connected to the telephone line or Ethernet network.



Wireless Network Connections

If you install an AirPort Card, you can

- connect your computer to a computer network that has wireless access
- use your computer to provide network access for other computers using wireless cards
- establish a wireless connection and share information with another computer that has an AirPort Card

Check with your network administrator for more information about reaching the network's wireless access point.

warning Several kinds of objects placed near the computer can cause interference. See the instructions that come with an AirPort Card or AirPort Base Station to learn about avoiding interference. You may also find more information in the Apple Technical Information Library: til.info.apple.com

To connect your computer to an existing network, check with the network administrator.

For More Information on AirPort

To purchase an AirPort Card or AirPort Base Station, contact your Apple-authorized dealer or go to the Apple Store at www.apple.com/store

Additional information on AirPort is available in AirPort Help. Choose Help Center from the Help menu and choose AirPort Help. You can also find information on Apple's AirPort Web site at www.apple.com/airport

Putting the Computer to Sleep to Save Energy

Your computer is set to go to sleep after a period of inactivity. Sleep is a state in which your computer uses very little power. You can also put the computer to sleep whenever you want.

When the computer goes to sleep, it saves its state so that when you wake the computer, your programs, documents, and control panel settings are exactly as you left them. You use the Energy Saver control panel, part of the computer's system software, to adjust sleep settings. For further energy savings, disconnect the computer from its power source or turn off the power strip when the computer is not in use.

To put your computer to sleep, you can

- touch the power button on the computer
- select a sleep mode in the Energy Settings portion of the Control Strip
- choose Sleep from the Special menu

When the computer is in sleep, the power button light pulses.

You wake the computer by touching the power button on the computer or by pressing a key. With some Apple monitors, you can also use the monitor power button to put the computer to sleep and wake it.

Transferring Information Between Two Apple Computers

If two Apple computers are not connected by a network, you can transfer information between them by connecting them with an Ethernet crossover cable (in effect creating a small network of just two computers). You connect the cable to each computer's Ethernet port and then turn on file sharing on both computers, or configure the computers' Ethernet settings to create a small network. For more information about configuring such an Ethernet connection, see Mac Help.

You can also connect two Apple computers using a FireWire cable. You can then use FireWire target disk mode to transfer files from one computer to another. For more information about using FireWire target disk mode, see "FireWire Target Disk Mode" on page 49.

If you have an Internet connection, you can also transfer files via the Internet to your iDisk storage area on iTools, where you or another iTools user can download them. For more information about iTools, see "iTools—Free Internet Services for Mac Users" on page 32.

CHAPTER

Working Inside Your Computer

This chapter provides information and instructions for working inside your computer. Read the overview information in this chapter to make sure devices that you intend to install are compatible with your Macintosh, then follow the installation instructions.

warning Always turn off and disconnect power from the computer before opening it.

Instructions are provided for the following procedures:

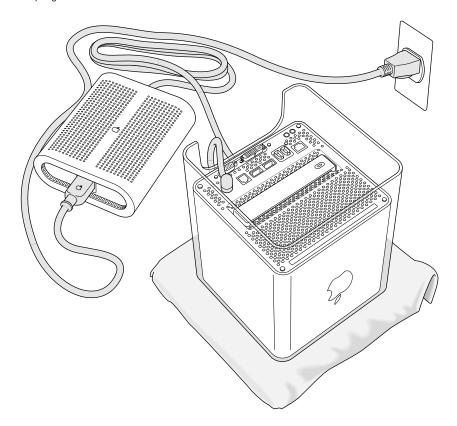
- "Removing the Computer Core" on page 60
- "Installing Memory" on page 64
- "Installing an AirPort Card" on page 66
- "Replacing the Battery" on page 67

Removing the Computer Core

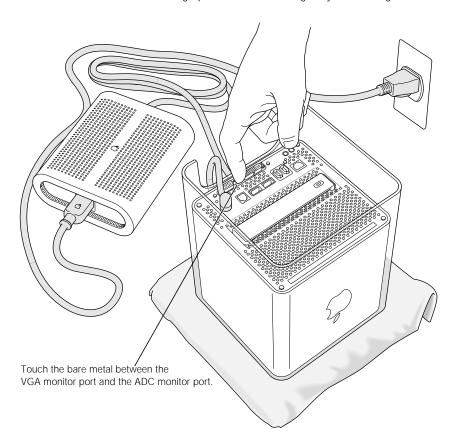
1 To shut down your computer, choose Shut Down from the Special menu. Wait five minutes to allow the computer's internal components to cool.

Warning Always shut down the computer before opening it. Do not attempt to install items while it is turned on.

- 2 Turn the computer upside-down on a soft, clean cloth.
- 3 Unplug all the cables from the computer except the power cord.
 - If you have never plugged in your computer: Connect the computer's power cord and plug it in.



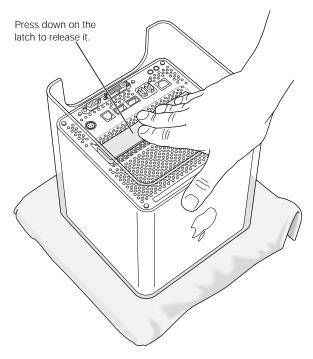
4 Touch the bare metal of the AGP graphics card to discharge any static charge.



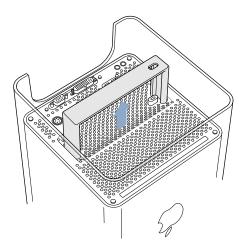
Important Always do this before you touch any parts, or install any components, inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the device and reinstalled the computer core.

5 Unplug the power cord and power adapter.

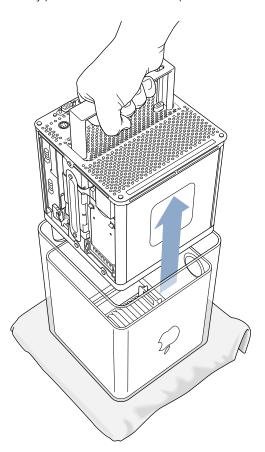
6 Push down on the latch to release it.



Allow the latch to extend completely.



Gently pull the core from the computer enclosure.



Installing Memory

You can install additional dynamic random-access memory (DRAM) in packages called Dual Inline Memory Modules (DIMMs).

Your computer's DRAM can be expanded to a maximum of 1536 megabytes (MB) by installing DIMMs in the three DRAM DIMM slots on the main logic board.

If you use 512 MB DIMMs, they must have 256 megabit (Mbit) devices. You can use 256 MB DIMMs that have 256 Mbit or 128 Mbit devices. To check the compatibility of these DIMMs, see the Apple Macintosh Products Guide on Apple's Web site: www.apple.com/guide

DIMMs must fit these specifications:

- "PC-100" Synchronous DRAM (SDRAM)
- 3.3 volt (V)
- 64-bit wide, 168-pin module
- Maximum number of memory devices on a DIMM is 16.
- Unbuffered; do not use registered or buffered SDRAM.
- Height must not exceed 1.38 inches (35 millimeters).

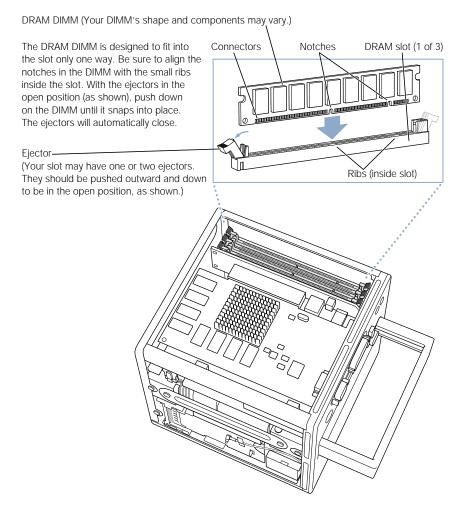
Important This computer uses SDRAM DIMMs. Only "PC-100" DIMMs from recent Power Macintosh G3 and G4 computers and servers are compatible with the ones your computer uses; DIMMs used in other older Macintosh computers are not. Do not use older DIMMs even if they fit into the DRAM DIMM slots.

Video memory for standard Macintosh models is supplied by Synchronous DRAM (SDRAM) soldered onto the AGP 2X graphics card that supplies the computer's monitor port. Standard Macintosh models come with 16 megabytes (MB) of SDRAM video memory.

You can use the Apple System Profiler program installed on your computer to check the amounts of DRAM and video memory installed.

- 1 Open the ejectors on the DRAM DIMM slots you want to use by pushing down on them.
- 2 Align a DRAM DIMM in the DRAM slot as pictured and push the DIMM down until the ejectors snap into place.

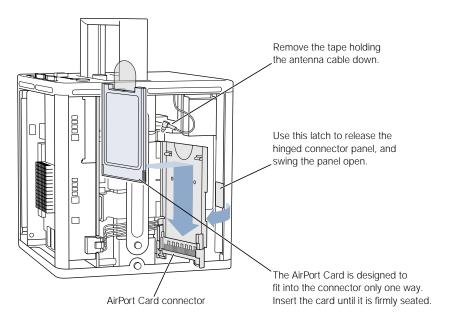
Important Do not touch the DIMM's connectors. Handle the DIMM only by the edges.



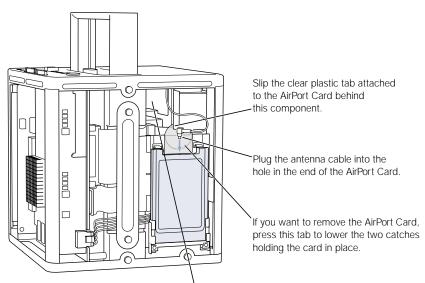
3 Replace the computer core in the enclosure. (See "Replacing the Computer Core in the Enclosure" on page 68.)

Installing an AirPort Card

Open the hinged connector panel and insert your card.



2 Plug in the antenna cable and close the hinged connector panel.



Tuck the excess antenna cable into this opening so that it won't get snagged when you reinstall the core into the enclosure.

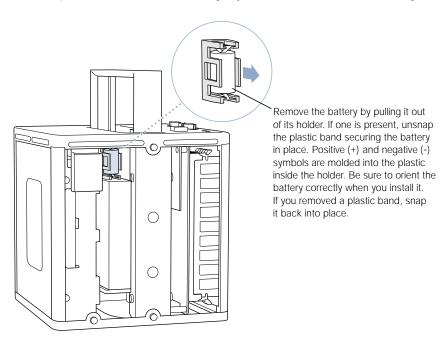
3 Replace the computer core in the enclosure. (See "Replacing the Computer Core in the Enclosure" on page 68.)

Replacing the Battery

Your computer has a 3.6 V lithium battery. Some signs that you need to replace the battery are intermittent problems starting up the computer and random changes in its date and time settings. You can purchase a replacement battery from an Apple-authorized dealer.

1 Remove the battery from its holder, noting the orientation of the battery's positive end. (Plus and minus are also marked on the battery holder.)

Important Batteries contain chemicals, some of which may be harmful to the environment. Please dispose of used batteries according to your local environmental laws and guidelines.



2 Insert the new battery in the holder, making sure the battery's positive and negative symbols align with those on the holder.

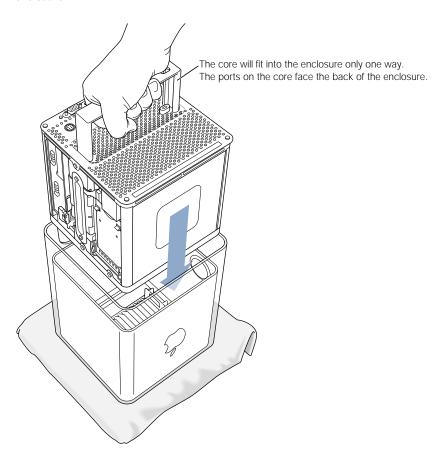
Warning Installing the battery incorrectly may cause an explosion. Be sure the battery's positive and negative poles are correctly oriented in the holder. Use only the same type of battery or an equivalent recommended by the manufacturer of the original.

3 Replace the computer core in the enclosure. (See "Replacing the Computer Core in the Enclosure" on page 68.)

Replacing the Computer Core in the Enclosure

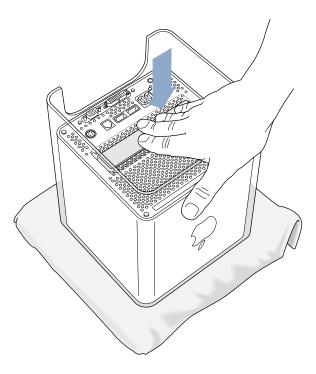
To replace your computer core in the enclosure, do the following:

1 Carefully lift the core by the latch, align it over the enclosure, and lower the core into the enclosure.



Make sure the core is fully seated in the enclosure.

Push the latch down until it locks into place.



warning Don't lift or carry your computer by the core latch. The enclosure could fall off the core and be damaged.



Troubleshooting

If you have a problem while working with your computer, here are some things you can try right away.

If the computer won't respond or the pointer won't move:

First, make sure the mouse and keyboard are connected.

■ Unplug and then plug in the connectors and make sure they are firmly seated.

Then try to cancel what the computer is doing.

- Press the Command (**) and Q keys at the same time to try quitting the current application.
- Press the Command (寒) and period keys at the same time and, if a dialog box appears, click Cancel.
- If that doesn't work, hold down the Option and Command (寒) keys and then press the Esc key. If a dialog box appears, click Force Quit. Restart the computer by choosing Restart from the Special menu in the Finder to be sure the problem is entirely cleared up.
- Press the reset button on the bottom of the computer. (The button is marked with the <a> icon.)
- If that doesn't work, touch the power button on the computer for 5 seconds until the computer turns off. After the computer turns off, touch the button again to turn it on.
- If all else fails, unplug the power cord to turn the computer off, then replug the power cord and restart the computer.
- If the problem occurs only when you use a particular program, check with the program's manufacturer to see if it is compatible with your computer.
- If the problem occurs frequently, choose Mac Help from the Help menu. Look at the section on how to prevent and solve problems. You may need to check for extension conflicts or reinstall your computer's system software.

If the computer freezes during startup or you see a continuous flashing question mark for more than a minute:

Turn off your system extensions.

Start up your computer while holding down the Shift key.

If that doesn't work, start up using the system software CD.

■ Insert your system software CD and start up while holding down the C key. (Make sure the Caps Lock key is not engaged.)

After the computer starts up:

 See the troubleshooting information in the onscreen help. Choose Mac Help from the Help menu. Look at the section on how to prevent and solve problems. You may need to check for extension conflicts or reinstall your computer's system software.

If the computer won't turn on or start up:

First, make sure the power cord is connected to a working power source and the power adapter is properly connected.

 The plug on the power adapter must be completely inserted into the computer's power socket and firmly seated for your computer to operate correctly.

Reset the computer's parameter random-access memory (PRAM).

■ Start up the computer and immediately hold down the Command (無), Option, P, and R keys until you hear the startup sound a second time. Then select your hard disk as the computer's startup disk using the Startup Disk control panel.

If that doesn't work:

- If you recently installed additional memory or an AirPort Card, make sure that it is correctly installed and that it is compatible with your computer. See if removing it allows the computer to start up.
- Contact an Apple-authorized service provider.

Software Problems

If you have a problem with a software program:

 For problems with software from a manufacturer other than Apple, contact the manufacturer.

If you have a problem using your computer or working with the Mac OS:

- Look at the Help Center (in the Help menu) for instructions and troubleshooting information.
- Go to the Apple Support Web site on the Internet for the latest troubleshooting information and software updates: www.apple.com/support

If you have trouble using wireless communication:

- Make sure you have properly configured the software.
- Make sure the computer or network you are trying to connect to is running and has a wireless access point.
- Make sure you are within antenna range of the other computer or the network's access point. Nearby electronic devices or metal structures can interfere with wireless communication and reduce this distance. Repositioning or rotating the computer may improve reception.
- See AirPort Help (in the Help Center) and the instructions that came with the wireless device for more information.

Problems With Your Display

Warning If you have a problem with your Apple display and nothing presented in this manual solves it, contact an Apple-authorized service provider or Apple for assistance. If you attempt to repair the display yourself, any damage you may cause to the display will not be covered by the limited warranty on your display. Contact an Apple-authorized dealer or service provider for additional information about this or any other warranty auestion.

No image appears on the screen.

- Make sure the display and computer are turned on.
- Make sure the cables are connected properly to your computer and the display.
- Make sure your computer is not in sleep.
- Make sure the display brightness and contrast are set properly. Some monitors have brightness and contrast controls on or under their front edge.
- Reset your computer's PRAM. (See page 72.)

The screen image appears dim or flickers.

- Adjust the display brightness and contrast settings. Some monitors have brightness and contrast controls on or under their front edge. Depending on how dim your monitor appears, you may be able to adjust brightness or contrast using the Monitors control panel.
- Calibrate the monitor using the Calibrate option in the Monitors control panel.
- The flickering may be caused by interference from a nearby power line, a fluorescent light, or an electrical device—for example, a radio, a microwave oven, or another computer. Try relocating nearby electrical devices, such as your speakers, or moving your computer and display.

No colors appear on the screen or the colors don't look right.

- Make sure the display is connected firmly to the computer.
- You may want to calibrate your monitor using the Monitors control panel. For more information on color and your display, see Mac Help.
- Open the Monitors control panel and check if your monitor is set to display grays. For more information on color and your display, see Mac Help.

After you change the screen resolution, desktop icons move.

 Changing the screen resolution affects the display of information on your screen. The operating system may automatically reposition icons after you change the screen resolution.

The screen freezes.

If you are using both Energy Saver and a screen saver program, the screen saver program may be conflicting with Energy Saver. Turn off either the screen saver program or Energy Saver and restart your computer.

The light on the front of the monitor is flashing.

On some Apple flat panel displays, the power light can display a series of short flashes when an error has been detected.

- If you see a repeating sequence of three short flashes, the monitor is detecting input in the wrong video format. Check that your monitor is compatible with your graphics card and that you've installed the correct monitor software, if your monitor came with installation software.
- If you see a sequence of two short flashes and a long flash, the monitor is detecting a
 problem with a backlighting lamp. Contact an Apple-authorized dealer or service provider.



Specifications

Processor and Memory Specifications

Processor

■ PowerPCTM G4 processor, 1 megabyte (MB) backside level 2 cache

Random-access memory (RAM)

- Minimum of 64 megabytes (MB) of Synchronous Dynamic Random-Access Memory (SDRAM), maximum of 1536 MB
- All SDRAM is supplied in removable Dual Inline Memory Modules (DIMMs).
- Three slots are available for DIMMs that are
 - "PC-100" SDRAM DIMMS
 - 3.3 volt (V) unbuffered, 64-bit wide, 168-pin
- DIMMS can be any of the following capacities:
 - 32 MB, 64 MB, or 128 MB DIMMS (64-bit wide, 64 Mbit technology)
 - 128 MB or 256 MB DIMMS (64-bit wide, 128 Mbit technology)
 - 512 MB DIMMS (64-bit wide, 256 Mbit technology)

The Mac OS system software provides information about your computer, including the amount of memory.

Dimensions and Operating Environment

Dimensions

Weight: 14.0 pounds (6.35 kg)
 Weight includes basic configuration only (no display or speakers). Weight may be greater if optional devices are installed.

Height: 9.8 inches (24.8 cm)
Width: 7.7 inches (19.5 cm)
Depth: 7.7 inches (19.5 cm)

Operating environment

- Operating temperature: 10° to 35° C (50° to 95° F)
- *Storage temperature:* -40° to 47° C (-40° to 116.6° F)
- *Relative humidity:* 5% to 95% (noncondensing)
- Altitude: 0 to 3048 meters (0 to 10,000 feet)

DVD-ROM Drive Specifications

Disc diameters supported: 8 cm and 12 cm (3.15 in. and 4.7 in.)

Data capacity

- CD-ROM: 656 megabytes (MB), Mode 1, 748 MB, Mode 2
- DVD-ROM: 4.70 gigabytes (GB), single-sided, single-layer; 8.5 GB, single-sided, double-layer; 9.4 GB, double-sided, single-layer; 17 GB, double-sided, double-layer
- *DVD-RAM:* 4.7 GB, single-sided, single-layer
- *DVD-R:* 3.95 GB, single-sided, single-layer
- CD-Audio: 74 minutes and 42 seconds play time

USB Specifications

- Two Universal Serial Bus (USB) Type A ports
- 500 milliamperes (mA) at 5 volts (V) is available per port for a total of 1 ampere.

FireWire Specifications

- *Main logic board:* Two built-in standard 6-pin FireWire connectors
- Data transfer speed: 100, 200, and 400 megabits per second (Mbps)

Power

- Input voltage range: 8 to 33 volts (V)
- Input power range: Approximately 1 watt (W)
- Output voltage range: Approximately 13 to 30 V
- Output power range: Up to 10 W

Ethernet Specifications

- IEEE 802.3 compliant
- Maximum cable length: 100 meters (m)
- Protocols: Open Transport, AppleShare, AppleTalk, NetWare for Macintosh, TCP/IP
- Connector: RJ-45 for 10Base-T and 100Base-TX
- Media, 10Base-T: Category 3 or higher UTP on 2 pairs up to 100 m
- Media, 100Base-TX: Category 5 UTP on 2 pairs up to 100 m
- Channel speeds: IEEE Auto Negotiation of 10Base-T and 100Base-TX

Modem Specifications

- Data communications standard: K56Flex and V.90
- Speed: 53 kilobits per second (Kbps)
- Fax standard: ITU V.17

Specifications for the AirPort Card (Optional)

- Wireless data rate: 11 megabits per second (Mbps) maximum
- Range: Up to 150 feet (data rates may vary depending on environmental conditions)
- Frequency band: 2.4 to 2.5 gigahertz (GHz)
- Radio output power: 15 dBm (nominal)

Compatibility

- 802.11 Direct Sequence Spread Spectrum (DSSS) 1, 2 Mbps standard
- 802.11 HR DSSS 11 Mbps draft standard

Digital Amplifier Headphone Jack Specifications

■ Full Scale Output level: 3.0 V peak-to-peak with a 5 kilohm load

Noise, distortion, and bandwidth

- Input sound signal-to-noise ratio (SNR) less than 82 decibels (dB) unweighted (typical) for recording to system disk or system main memory
- Output sound signal-to-noise ratio (SNR) less than 80 dB unweighted (typical)
- Distortion: Total harmonic distortion: 0.08 percent
- Bandwidth: 20 hertz (Hz) to 20 kilohertz (kHz)

Video Memory and Graphics Controller

Graphics controller: AGP card with Apple Display Connector (ADC) and VGA connector

Video Display Modes

Your monitor may not support all the resolutions listed here. For technical specifications for your specific display, go to the Apple Web site and check the specifications for your product listed there: www.apple.com/store

VGA port

- 640 x 480 at 60, 67, 72, 75, 85, 90, 100, 120 Hz
- 800 x 600 at 56, 60, 72, 75, 85, 90, 100, 120 Hz
- 832 x 624 at 75 Hz
- 1024 x 768 at 60, 70, 75, 85, 90, 100, 120 Hz
- 1152 x 870 at 75 Hz
- 1280 x 960 at 75 Hz
- 1280 x 1024 at 60, 75, 80 Hz
- 1600 x 1200 at 60, 65, 70, 75, 85 Hz
- 1920 x 1080 at 60, 72, 76 Hz

Apple Display Connector port

- 640 x 480
- 640 x 480 (stretched)
- 800 x 500
- 800 x 600
- 800 x 512 (pixel doubled)
- 800 x 600 (stretched)
- 832 x 624
- 1024 x 640
- 1024 x 768
- 1024 x 768 (stretched)
- 1280 x 800
- 1280 x 1024
- 1600 x 1024
- 1600 x 1200

Power Supply

DC line input

■ Line voltage: 128.5 V DC

Power Requirements for Devices You Can Connect

USB devices

■ Each of the computer's built-in USB ports is allotted 500 milliamperes (mA).

FireWire devices

■ The computer can provide up to 10 W total to the FireWire ports.

System Clock and Battery

■ CMOS custom circuitry with long-life lithium battery. You can purchase replacement batteries from an Apple-authorized dealer.



Safety, Maintenance, and Ergonomics

This appendix provides important information about safety procedures, routine maintenance, and ergonomic considerations for using your computer and display.

Important Safety Information

The only way to disconnect power completely from your computer is to unplug the power cord from the main power supply. Similarly, to disconnect your display completely, you must also unplug its power cable from the computer or other power outlet. Make sure at least one end of the power cord is within easy reach so that you can unplug the computer or display when necessary.

For your own safety and that of your equipment, always take the following precautions.

Disconnect the power plug from your computer or display if any of the following conditions exists:

- the power cord or plug becomes frayed or otherwise damaged
- you spill something into the case
- your computer or display are exposed to rain or any other excess moisture
- your computer or display have been dropped or the case has been otherwise damaged
- you suspect that your computer or display needs service or repair
- you want to clean the computer or display case or screen

To prevent accidents and damage to your computer or display, be sure that you always follow these instructions:

- Keep your computer and display away from sources of liquids and moisture.
- Don't set anything on top of the computer or display.
- Keep the computer and display vents free from obstruction.

- Never remove the case from the monitor, or remove the core from your computer when it's running.
- During lightning storms, disconnect your modem from the phone jack to prevent a destructive voltage overload from damaging the modem.

Your computer is equipped with a three-wire grounding plug—a plug that has a third grounding pin. This is a safety feature. Don't modify the plug to fit into an ungrounded outlet. Contact a licensed electrician to replace the outlet with a properly grounded one. Do not defeat the purpose of the grounding plug!

Be careful when lifting or moving your monitor, if it's heavy. Be sure to use correct lifting procedures, lifting with your legs. When carrying the monitor, make sure the monitor is facing you. Don't carry the monitor by its stand.

Electrical equipment may be hazardous if misused. Operation of this product by children must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle electrical cables

General Maintenance

If you need to clean the computer or display beyond wiping them down with a clean cloth, follow these instructions:

- Turn your computer and display off.
- Disconnect the computer power cable from the electrical outlet or power strip. If your display has a power cable connected to an outlet, disconnect it as well.
- Disconnect the display's cables from the computer.
- Clean the display screen with soft, lint-free paper or cloth dampened with mild soap and water.
 - warning Do not spray liquid directly onto the display screen. Liquid could drip inside the display and cause electrical shock.
- Wipe the computer or display case surfaces lightly with a clean, soft cloth dampened with water.
 - Don't use alcohol, aerosol sprays, solvents, or abrasives that might damage the finish on the case.

Protecting Your DVD Disc Drive

To keep your DVD disc drive working properly:

- Position your computer so that you can easily insert discs without obstructions.
- Do not put anything on top of the drive.
- Keep your computer away from any source of moisture.

Maintaining Your Display

To maintain your display and ensure its long life:

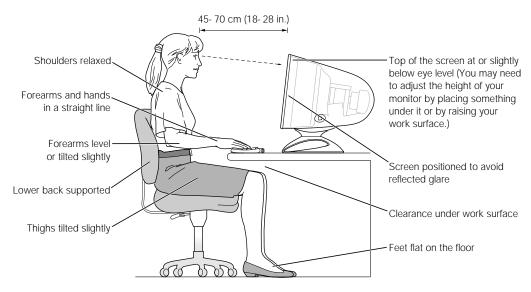
- Do not press on the surface of the display screen.
- Do not write on the screen or touch the screen with a sharp object.
- If you will not be using your display and computer for a day or more, turn off the computer and display or use Energy Saver.
- Turn off your monitor, turn down the brightness, or use a screen saver program that dims or varies the image on the screen when the computer is idle for a prolonged time.

Important Ergonomic and Health-Related Information

Here are some guidelines for adjusting the furniture in your office to reduce glare and to accommodate your physical size and shape.

- An adjustable chair that provides firm, comfortable support is best. Adjust the height of the chair so your thighs are tilted slightly and your feet are flat on the floor.
 The back of the chair should support your lower back (lumbar region). Follow the manufacturer's instructions for adjusting the backrest to fit your body properly.
- When you use the computer keyboard, your shoulders should be relaxed. Your upper arm and forearm should form an approximate right angle, with your wrist and hand in roughly a straight line.
 - You may have to raise your chair so your forearms and hands are at the proper angle to the keyboard. If this makes it impossible to rest your feet flat on the floor, you can use a footrest with adjustable height and tilt to make up for any gap between the floor and your feet. Or you may lower the desktop to eliminate the need for a footrest. Another option is to use a desk with a keyboard tray that's lower than the regular work surface.

- Position the mouse at the same height as your keyboard. Allow adequate space to use the mouse comfortably.
- Arrange the monitor so the top of the screen is slightly below your eye level when you're sitting at the keyboard. The best distance from your eyes to the screen is up to you, although most people seem to prefer 18 to 28 inches (45 to 70 cm).
- Position the monitor to minimize glare and reflections on the screen from overhead lights and nearby windows. You may want to use a tiltable monitor stand. The stand lets you set the monitor at the best angle for viewing, helping to reduce or eliminate glare from lighting sources you can't move.



For more information about health, safety, and maintenance, go to Apple's World Wide Web site: www.apple.com/about/ergonomics

Communications Regulation Information

FCC Compliance Statement

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. See instructions if interference to radio or television reception is suspected.

Radio and Television Interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make
 certain the computer and the television or radio are on circuits controlled by different circuit breakers or
 fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions.

Important Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Compliance and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

Responsible party (contact for FCC matters only): Apple Computer, Inc., Product Compliance, 1 Infinite Loop M/S 26-A, Cupertino, CA 95014-2084, 408-974-2000.

Industry Canada Statement

This Class B device meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

VCCI Class B Statement

情報処理装置等電波障害自主規制について

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

取扱説明書に従って正しい取り扱いをしてください。

Laser Information

Warning Making adjustments or performing procedures other than those specified in your equipment's manual may result in hazardous radiation exposure.

Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increases the potential hazard to your eyes. For your safety, have this equipment serviced only by an Apple-authorized service provider.

If you have an internal Apple CD-ROM, DVD-ROM, or DVD-RAM drive in your computer, your computer is a Class 1 laser product. The Class 1 label, located in a user-accessible area, indicates that the drive meets minimum safety requirements. A service warning label is located in a service-accessible area. The labels on your product may differ slightly from the ones shown here.





Class 1 label

Service warning label

Laser Specifications

Laser on pickup unit (when reading a CD)

■ *Type:* Semiconductor GaAlAs laser

■ Wavelength: 790 nm

■ Power out of objective lens: 3.3mW

■ Beam divergence: horizontal 12° vertical 35°

Laser on pickup unit (when reading DVD)

■ *Type:* Semiconductor GaAlAs laser

■ Wavelength: 658 nm

Power out of objective lens: 6 mW

■ Beam divergence: horizontal 8.5° vertical 27°

Exposure to Radio Frequency Energy

The radiated output power of the optional AirPort Card is far below the FCC radio frequency exposure limits. Nevertheless, it is advised to use the wireless equipment in such a manner that the potential for human contact during normal operation is minimized.

Mouse and Keyboard Information

The Apple optical mouse is a Class 1 LED product. This product complies with the requirements of European Directives 72/23/EEC and 89/336/EEC.

It also complies with the Canadian ICES-003 Class B Specification.

High-Risk Activities Warning

This computer system is not intended for use in the operation of nuclear facilities, aircraft navigation or communications systems, or air traffic control machines, or for any other uses where the failure of the computer system could lead to death, personal injury or severe environmental damage.

ENERGY STAR® Compliance

As an ENERGY STAR® partner, Apple has determined that this product meets the ENERGY STAR® guidelines for energy efficiency. The ENERGY STAR® program is a partnership with office product equipment manufacturers to promote energy-efficiency. Reducing energy consumption of office products saves money and reduces pollution by eliminating wasted energy.

Communications, Telephone, and Modem Regulation Information

For information on FCC regulations, radio and television interference, and telephone and modem information as it relates to this product, see the files in the Communications Regulations folder, inside the Apple Extras folder on your hard drive.