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- [Appliances](#)
- [Electronics & computers](#)
- [Home & garden](#)
- [Health & fitness](#)
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Moving to a new computer

When you buy a new computer, you're likely to spend considerable time transferring the data and software from your old computer. Before making the move, it pays to consider whether you really need a new machine. Maybe all you need is to upgrade your existing computer. Below, you'll find help making that decision, plus a step-by-step guide on how to move to a new computer and what to do after you've completed the move.

- [Do you really need a new computer?](#)
- [Making the move](#)
- [After the move](#)
- [What to do with your old computer](#)



Illustration by Michael Aveto

DO YOU REALLY NEED A NEW COMPUTER?

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If all you need is more hard drive space, here are several ways to do so without having to spring for an entirely new system:

A. Remove unneeded programs. Look at your program list.

1. Open Start, Settings (in Windows 98), Control Panel, Add or Remove Programs or the Macintosh HD, Applications folder in Mac OS.
2. Uninstall programs you've forgotten about or don't need anymore. If you upgraded from a prior Windows version, you can remove the "Uninstallation Files," assuming Windows is now working properly.
3. While you're there in Add or Remove, click the Windows Components icon as well, and if there are parts of Windows--like MovieMaker or Windows Messenger--that are useless to you, unselect them as well. You may need to click the Details button to see all the components.
4. Mac users can usually just drag a program's folder to the Trash icon, but first check to see whether an Uninstall icon is in the folder.

B. Use Windows 98/XP's Disk Cleanup. This useful utility is on the Programs menu under Accessories, System Tools. It lets you remove files that Windows has accumulated over time. You can also schedule Disk Cleanup to run periodically.

1. If you have Windows XP, check the file system type by right-clicking the drive's icon and selecting Properties. Make sure your hard drive uses the "NTFS" file system. You can set chosen folders to automatically keep files in a compressed form that uses less space.
2. In Windows Explorer, right-click the folder you want to compress.
3. Click Properties, and the Advanced button.
4. Check the Compress contents to save disk space box. Files Windows compresses can be accessed without your uncompressing them, but they may take a bit longer to load.

C. Find and delete forgotten files. You may have folders full of files you used once and forgot about. To tally the size of all the files in a folder using Windows Explorer, right-click the folder and select Properties. Don't delete files or folders you don't recognize or files in the Windows (or Mac OS System) folders. Files associated with a program should be removed by uninstalling the respective program as previously described. After the program is uninstalled, it's safe to delete its folder.

For Windows users, the most convenient way to see which folders are taking up the most space is via a Windows utility, DiskMapper (\$50 with a 60-day return policy, www.miclog.com). The program shows you a graphical floor plan of your hard drive, with each folder sized in proportion to how many bytes it holds. You can drill down into a folder's contents using your mouse, and delete unwanted material right there.

D. Add a second hard drive. You've freed up as much hard drive space as you can, but you need more room for large applications (100 to 200 MB), a multi-CD game (1 to 2 GB), a collection of MP3 music (500 MB up), or a couple hours of digital video (20 to 40 GB). Chances are your PC--as nearly

all desktops we test--has a space called a drive bay inside reserved for a second hard drive, complete with the necessary power and data connectors. Hard drives are a commodity. A 40- to 300-GB drive runs about \$1/GB.

Installing a second hard drive on a fairly recent PC--one that came with Windows 98, Mac OS 9, or later--isn't difficult. Fasten it in place with four supplied screws, plug in two cables the only way they fit, switch on the PC, and perform a simple configuration procedure. Usually instructions come with the new hard drive. The best step-by-step explanation we've found online is from a May 2003 article on TechTV's website:

<http://www.techtv.com/callforhelp/howto/story/0,24330,3322450,00.html>.

A caveat: When you get to page 5, Create a Partition, the simple Windows XP procedure is described at the bottom of the page after the more complex Windows 98 procedure.

If your PC is more than three years old, ask the manufacturer how large a hard drive it can accommodate. Older PCs that weren't designed for drives larger than 32 GB will only be able to see that much of any larger drive. New drives often come with driver software that can work around this limitation. If you need to install such software, be prepared to follow directions carefully. If that's not for you, let a technician do it.

Once a second drive is installed and running, note the drive letter that Windows has assigned it. Install newly obtained software on the new drive from then on. If the original drive has less than 500 MB free, consider uninstalling some of the software from it and re-installing that on the new drive.

E. No room for a second hard drive? Or, your PC is a laptop? Consider an external hard drive. They cost about \$50 more than an internal drive. They use a data cable to connect to the PC, through a USB or FireWire port, or a laptop PC-card slot. A USB-1 connection, found on most PCs from 2002 or earlier, is generally too slow for a hard drive, except one used for backups. You can add a plug-in PCI card (about \$30) with USB-2 or FireWire ports to a desktop computer running Windows 98 or later.

F. Not for the timid: Changing hard drives. If you have no way to add a second hard drive, or your hard drive is becoming unreliable, consider moving everything to a new drive. How difficult this is to do depends on the type of computer and version of Windows you're running. Windows XP's security and user-authentication schemes make it more difficult than with prior Windows versions to flawlessly copy an entire system drive's contents to a new drive.

Essentially, Windows XP bonds itself to your hard drive and motherboard when it's installed. Moving an installation to another drive requires software that takes these bonds into account.

Given the variety of configurations, the complexity of the task, and the potential for getting into trouble, we recommend against such hard-drive swapping. If you must do it, leave it to someone with experience and the knowledge of how to handle unanticipated problems.

If you still want to tackle it, perform a careful backup of all your documents, media files, and downloaded programs first, as a safeguard. Then, use the latest version of Norton Ghost or PowerQuest Drive Image. Both can move an entire drive's contents to a new one. If you can't install the new drive as a second drive in the same PC, you'll need to burn some CD-Rs to hold the contents of the old drive, or connect via a network to a drive on another PC with enough free space to hold the old drive's contents.

MAKING THE MOVE

Your new PC has an operating system and other software installed that incorporates many items unique to your computer. Examples are special "driver" programs installed by the PC manufacturer for each of your specific hardware components, help files and documentation for your PC's hardware and software, utilities that are set up to access the manufacturer's online resources, and applications that have been pre-installed, but without supplied re-installation disks, system and application restore files on a separate hard-drive partition.

For your new PC to operate properly, you must leave such items intact on the hard drive. You can't just clone old drive to new. To prevent overwriting critical operating-system files and the other components, you must transfer data or programs from your old PC both carefully and methodically.

A. Getting connected. A high-speed, wired connection is the best way to move large amounts of data files from one operating PC to another. The best compromise among cost, speed, reliability, and complexity is an Ethernet network. For this, both computers need an inEthernet card (also known as an Ethernet port, "10/100-base-T" port, or simply a LAN (Local Area Networking) port. Both PCs' ports need to be connected with an Ethernet cable (also known as Cat-5) either to an existing network hub or router, or directly to each other using a special crossover cable.

Another way to connect two PCs that have USB ports is via a USB network cable, such as the Belkin USB Direct Connect F5U104 (\$50), or the Micro Innovations USB600A (\$18). Make sure it comes with "NDIS" software drivers that make the link appear to the PCs as a normal TCP/IP network connection.

Once they are physically connected, the PCs need to be set up so the new one can access the old one's hard drive across the network. Chances are that the newer of your PCs has Windows XP, which has a utility called "Network Setup Wizard" (Start, All Programs, Accessories, Communications). This asks a few simple questions, to which you take the default answers. At the end, you're prompted to create a diskette to run on the older PC, which sets it to be able to talk to the new one.

B. The sneakernet alternative. If you can't get wired, you can still transfer your files by writing them to disks on the old PC and reading them into the new one. If the old PC has a CD burner, you can do this with far fewer disks than if you use a diskette drive.

C. Backing up is critical. It's good practice to keep a fresh backup copy of any personal documents, worksheets, databases, and downloaded files. Back up anything you wouldn't want to lose. That's unlikely to happen from day to day, but it's but more likely when you--or anyone else--performs major "surgery" on your PC, including moving large groups of files to another hard drive or system. You're responsible for your own data; don't entrust the backup to others.

1. First, make a list of the folders containing the files and subfolders you want to back up. This list should include standard locations like Windows' My Documents and any documents you've placed on the Desktop. If you have more than one user with their own logon to your PC, include everyone's document folders, even though they may only be accessible when they log on.

2. Don't back up program files for installed programs. They will have to be re-installed from scratch or moved with savvy program-moving software (see below). Be sure to locate the documents or multimedia files (pictures, videos, music) you've created with various applications. They don't always end up in My Documents. Also include your Favorites folder, e-mail from your e-mail program, and address book or scheduler data from any personal information manager you use. Most e-mail and organizer programs, such as Outlook, Netscape mail, and Eudora, have an export or backup feature to save this information to files.

3. Online services like AOL and MSN that use a web-based or proprietary interface may keep your mail and addresses on their servers. You need not move them. After you get online with the new PC, be sure you have everything you want. If not, move it over at that time.

4. Decide where you want to copy the backup files.

a. If your old PC has a CD burner, use it.

b. If not, but the old PC is networked to another PC with enough space on a shared hard drive to hold the backup files, that's the next best choice.

c. If neither of those apply, you may need to use diskettes. If you have a lot of files, or many large ones, such as music files or downloaded programs, estimate whether they will need more than one CD, or how many diskettes you will need. To do this, select a group of files or one or more folders, and check Size on disk in its property sheet (right-click and select Properties). A CD will hold about 600 MB, a diskette about 1.4 MB.

Be sure to copy, not move the files, so your originals remain intact. You should be able to drag-and-drop files and folders to the backup drive.

D. Transferring to the new PC. Next, decide on how automated you want the process of setting up the new PC to be.

1. The first alternative--easiest if only a few removable disks' worth of your old files are needed--is to manually copy your documents and personal files to the corresponding locations on the new PC, creating folders for them if needed. If you've configured the desktop settings to your liking on the old PC, redo those settings. That may not matter if you're also stepping up to a newer version of Windows or Mac OS that doesn't resemble the old one.

2. Next, in order of complexity, use the Windows XP Files and Settings Transfer Wizard. That can step you through the process of copying personal files, Windows profile and desktop settings, e-mail and contacts from Microsoft Outlook Express, Favorites, and program settings for many common programs. This wizard creates a diskette you run on the old PC that sets it up to automatically copy all these items to the new PC. You can also set up the Transfer Wizard on the old PC directly from a Windows XP installation CD.

The transfer can be over a network, a serial cable, or to a set of transfer diskettes. It can't transfer via a CD burner directly, unless the CD-R drive in the old PC has direct-writing software, which uses specially formatted CD-R disks that allow the drive to be treated as a large diskette drive. (Some names for this kind of software are DirectCD, InCD, and DLA.)

One quirk of the Transfer Wizard is that it assumes you will re-install all your applications on the new PC, so it transfers the program-launch items on your Start, Programs menu plus shortcuts from the Windows desktop. If you choose not to re-install some applications, manually delete their launch icons from the new PC.

If your new PC has any of the same applications pre-installed, their transferred launch icons or shortcuts may not work and may have to be deleted, but the pre-installed ones should work. There have been reports of the Transfer Wizard missing some files during a transfer; check each application after you've re-installed. Make sure it can find all documents or files you expected to transfer. Non-Microsoft applications may require custom settings, such as the default document location, to be corrected after re-installation.

E. Moving programs. Moving application programs to a new computer is more complex than re-installing them. Parts of a Windows application reside in folders other than the program's own folder; configuration data is deeply embedded in a large database called the Registry, that Windows uses to manage the whole PC.

One commercial application, described below, attempts a "one-step," files, settings, and programs transfer. It is reported to work in most cases, but be aware that the underlying technology is so complex and prone to unanticipated problems that the process will probably not go perfectly.

Alohobob PC Relocator (<http://www.alohabob.com/products/index.asp>; \$30 standard, \$70 Ultra Control) can transfer recent versions of popular application software over a USB cable (included with the Ultra version), a parallel cable (included with the standard version), a network connection (Ultra version only), or via removable disks. The standard version can't use the network method and doesn't let you select which applications you want to transfer. Alohobob provides extensive technical support. The fee-based premium support is reasonably priced.

AFTER THE MOVE

There are several tasks remaining after you've moved everything to the new PC.

A. Get everything working again.

1. Try out all your programs, both pre-installed and re-installed. Make they operate as expected.
2. Be sure the programs with which you have created documents or media files can locate and open those you moved.
3. Check your e-mail and PIM (Personal Information Manager) programs to be sure you can see your existing personal information.
4. Be sure you can connect to and browse the Internet and send and receive e-mail (you may have to re-enter your account and login information). Make sure your browser shortcuts are available.

B. Protect yourself.

1. Be sure your anti-virus program is functioning, and that the automatic update feature is enabled.
2. Update your virus definitions and perform a full system scan.
3. Especially if you have a broadband connection, check that an Internet

firewall program is functioning, or at least enable the Windows firewall.

- a. Click Start, Control Panel, Network Connections.
- b. Open your Internet connection's Properties sheet.
- c. Click the Advanced tab.
- d. Enable the Internet Connection Firewall.

C. Update. On a new PC, Windows will prompt you to enable automatic Critical Updates, which we recommend.

1. Perform a Windows Update (Click Start, All Programs, Windows Update), or a Mac OS update (Click Apple Menu, System Preferences, Software Update) as soon as possible, to get the latest security and driver updates.
2. Examine the optional updates to see which ones appear to apply to the activities you anticipate.
3. Some of your applications may also have updates available. Look for a "Check for Updates" choice, often on the program's Help menu. Or check the software manufacturer's Web site to see if there's a downloadable update that pertains to you. Some PC manufacturers have their own connection software to update drivers or system utilities they've provided.

WHAT TO DO WITH YOUR OLD COMPUTER

Once you've made absolutely sure that nothing has been missed in the move, consider what to do with the old system, keeping in mind that the old drive has personal files and information on it. Here are a few possibilities:

A. Use the old system yourself. If a trusted family member can use the old PC, you needn't worry about personal files. Uninstall applications you don't need in the new location or whose Software End-User License Agreement (EULA) permits you to use only a single copy.

B. Keep the old drive for backup. If the old system isn't useful, but its hard drive has significant capacity (say, 4 GB or more), and your new PC has an empty bay inside for a second hard drive, move the old hard drive over to act as a backup device. Follow the instructions given previously for adding a second hard drive.

C. Clean up the drive. If you won't be keeping the old PC, we strongly recommend that you rid it of all traces of personally identifiable information that could be used for identity theft. Windows and Mac OS don't completely remove files you delete. Recovering erased files deleted by the operating system is a simple operation.

1. Third-party software can securely expunge files from a hard drive. One good, free one is Eraser (<http://www.heidi.ie/eraser>). Drag the files you want to wipe into its window, hit the "X," and they're gone for good. There's a similar capability built into the popular Norton SystemWorks. However, you may not know about every file containing personal data. Windows also keeps lists of recently used filenames and other program data--potentially personal--in a large file called the Registry, which can't be deleted if you want keep

using Windows. Searching for and removing every piece of potentially revealing information from a drive is a daunting task.

2. Alternatively, you can take many PCs back to their factory-fresh condition--expunging all the files you created--by using the Restore CD the computer manufacturer may supply. Usually this involves booting the PC from the Restore CD and following a few on-screen prompts. If you're offered restore options, choose the one that is more thorough, usually called "full restore" or "restore with formatting." (This process is irreversible. Make sure you don't need anything that didn't originally come on the PC's hard drive.) You may have to continue restoring additional CDs, or re-install applications separately.

3. Without a Restore CD, the most thorough way to erase data is to re-format the hard drive, after which you re-install the operating system from the original CD. To do this in Windows:

- a. Restart the PC from an "emergency boot" diskette, which you can create following instructions in Windows Help.
- b. Once you've rebooted to the diskette, type "format c: /s"--which will reinitialize the hard drive and make it bootable.
- c. Reboot to the diskette again, selecting the option "with CD support."
- d. Run the "setup" program on the Windows CD.

With a Mac:

- a. Set the Startup Drive to be the CD drive.
- b. Boot to the Mac OS CD.
- c. Open the Utilities folder and run Drive Setup.
- d. Select the hard drive and click "Initialize."

D. Sell, give away, or donate the old system. If the system isn't too old, another user might buy it through an ad in your local paper or an online auction site like eBay. Even a relatively old PC can usually be set up to access the Internet. Many local, regional, and national organizations take usable PCs for groups or individuals who can't buy new PCs. One such national group is the Cristina Foundation (www.cristina.org/dsf).

E. Recycle everything. If nobody can use the old PC, or it's just too old (that is, it can't run at least Windows 95 or Mac OS 7.5), it may be destined for the scrap heap. Consider keeping the CRT monitor as a spare or giving it away, since it's the most environmentally hazardous component, with pounds of lead-filled glass and other toxics. Some states--Massachusetts was the first--have banned them in landfills.

To find a recycler, check the National Recycling Coalition's Electronics Recycling Initiative (<http://www.nrc-recycle.org/resources/electronics>). It has state-by-state lists of regulations and recycling programs, and a database to find recyclers in your area. See if your community has a computer-recycling program. If you're planning to buy a new PC, Gateway has a trade-up program that provides a financial incentive for proper disposal. Other

manufacturers, like Apple, Dell, and IBM, offer a fee-based program to dispose of PCs and peripherals in an environmentally responsible manner.

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